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VOL. CIX

TWO HUNDRED AND SEVENTH SESSION 1960-61

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A list of Standing Committees for 1960-61 is published on pages 65-69 of this issue.

FORTHCOMING MEETINGS

WEDNESDAY, 30TH NOVEMBER, at 6 p.m. 'Some Traffic Problems of London', by A. Samuels, C.B.E., A.M.I.Mech.E., M.Inst.T., Chairman, London and Home Counties Traffic Advisory Committee. Sir Richard Nugent, Bt., M.P., in the Chair.

MONDAY, 5TH DECEMBER, at 1.50 p.m. Special Lunch-time Meeting. 'The History and Scope of the Society's Library', by D. G. C. Allan, M.Sc.(Econ.), F.R.Hist.S., the Society's Curator-Librarian. R. W. Holland, O.B.E., M.A., M.Sc., LL.D., Chairman of the Library Committee and a Vice-President of the Society, will preside. (The Meeting will be held in the Library. Coffee will be served from 1.30 p.m.)

TUESDAY, 6TH DECEMBER, at 6.30 p.m. (preceded by tea from 5.45 p.m.) Joint Meeting with the Institution of Plant Engineers. 'The Architect's Approach to Engineering in Tall Buildings', by Sir Thomas Bennett, K.B.E., F.R.I.B.A. The Right Honble. Lord John Hope, P.C., M.P., Minister of Works, in the Chair. (The paper will be illustrated by lantern slides. Fellows wishing to attend should apply to the Secretary for tickets.)

TUESDAY, 13TH DECEMBER, at 2.30 p.m. COMMONWEALTH SECTION. 'Sport in the Commonwealth', by G. A. McPartlin, Senior Technical Adviser, Central Council of Physical Recreation. Harold M. Abrahams, C.B.E., J.P., in the Chair. (This paper—which will be illustrated with lantern slides—has been arranged particularly for younger people (aged 15 upwards), on whose behalf Fellows are invited to apply for tickets. Tea will be served in the Library after the meeting.)

WEDNESDAY, 14TH DECEMBER, at 6 p.m. 'The Function of Trade Unions in Industry and Commerce', by W. J. Carron, President, Amalgamated Engineering Union. The Right Honble. Viscount Knollys, G.C.M.G., M.B.E., D.F.C., Chairman, Vickers Ltd., in the Chair.

FRIDAY, 30TH DECEMBER, at 2.30 p.m. JUVENILE LECTURE. 'The Legend of the Phoenix', by Maurice Burton, D.Sc., lately of the Natural History Museum. (Special tickets are required. See separate Notice on p. 4.)

WEDNESDAY, 4TH JANUARY, at 2.30 p.m. JUVENILE LECTURE. 'Railways in Our Time', by C. Hamilton Ellis. (Special tickets are required. See separate Notice on p. 4.)

THURSDAY, 5TH JANUARY, at 6.45 p.m. SPECIAL MEETING. 'Larger Than Life', by A. B. Read, Past Master, Faculty of Royal Designers for Industry. Oswald P. Milne, F.R.I.B.A., J.P., Chairman of Council of the Society, in the Chair. (The Oration will be preceded by a number of presentations. See separate Notice on p. 3.)

FRIDAY, 6TH JANUARY, at 6.30 p.m. FILM EVENING. (See Programme on p. 4.)

WEDNESDAY, 11TH JANUARY, at 6 p.m. 'Ergonomics—Fitting the Job to the Worker',

by C. B. Frisby, Ph.D., Director, National Institute of Industrial Psychology. The Right Honble. the Earl of Halsbury, F.R.I.C., F.Inst.P., in the Chair.

THURSDAY, 12TH JANUARY, at 2.30 p.m. COMMONWEALTH SECTION. '*Photography and Exploration in the Himalayas*', by Captain John Noel. Sir Alwyne Ogden, K.B.E., C.M.G., in the Chair. (This paper—which will be illustrated with lantern slides—has been arranged particularly for younger people (aged 15 and upwards), on whose behalf Fellows are invited to apply for tickets. Tea will be served in the Library after the meeting.)

WEDNESDAY, 18TH JANUARY, at 2.30 p.m. FRED COOK MEMORIAL LECTURE. '*The Restoration Portrait*', by Oliver N. Millar, M.V.O., F.S.A., Deputy Surveyor of the Queen's Pictures.

MONDAY, 23RD JANUARY, at 6 p.m. The first of three CANTOR LECTURES on '*The Chemical and Plastics Industries*', by James Taylor, M.B.E., Ph.D., D.Sc., F.R.I.C., a Director of Imperial Chemical Industries Ltd.

WEDNESDAY, 25TH JANUARY, at 6 p.m. ALFRED BOSSOM LECTURE. '*Architecture in Transport*', by F. F. C. Curtis, Dr.Eng., F.R.I.B.A., Architect to the British Transport Commission. The Right Honble. Lord Bossom, LL.D., F.R.I.B.A., a Vice-President of the Society, in the Chair.

MONDAY, 30TH JANUARY, at 6 p.m. The second of three CANTOR LECTURES on '*The Chemical and Plastics Industries*', by Dr. James Taylor.

WEDNESDAY, 1ST FEBRUARY, at 2.30 p.m. '*Wall-paper and its History*', by E. A. Entwisle, a Director, Wall-paper Manufacturers Ltd., Ivan C. Sanderson, Chairman, Arthur Sanderson & Sons Ltd., in the Chair.

MONDAY, 6TH FEBRUARY, at 6 p.m. The last of three CANTOR LECTURES on '*The Chemical and Plastics Industries*', by Dr. James Taylor.

Fellows are entitled to attend any of the Society's meetings without tickets (except where otherwise stated), and may also bring two guests. When they cannot accompany their guests, Fellows may give them special passes, books of which can be obtained on application to the Secretary.

Official representatives of Companies in association with the Society may also attend, with one guest.

SPECIAL MEETING

Before Mr. Read's Oration at the Special Meeting of the Society on 5th January (see page 2), the Chairman of Council will present the following awards:

Diplomas of the Distinction of Royal Designer for Industry: to Sir Basil Spence, Stanley Morison, and Alastair Morton.

Diploma of the Honorary Distinction of Royal Designer for Industry: to Charles Eames.

The Bicentenary Medal for 1960: to J. Cleveland Belle.

JUVENILE LECTURES

Special tickets for the Juvenile Lectures announced on page 2 will shortly be available and will, when ready, be sent to Fellows on request as far as the accommodation in the Lecture Hall permits.

Fellows are entitled to apply for tickets admitting one adult and two children to each lecture, and should state their exact requirements within these limits when making application.

FILM EVENING

The next Film Evening will be held at the Society's House on Friday, 6th January, at 6.30 p.m. As is usual at the January Film Evening, the programme is likely to be of special interest to the older children of Fellows, and the following films will be screened:

Guispeppina

Where Mountains Float

The Travel Game

Guispeppina (32 minutes) is a colour film made by James Hill Productions for the British Petroleum Company. It gives a charming picture of the changes being introduced to-day into the life of the Italian countryside by telling the story of a day in the life of Guispeppina, the young daughter of a petrol-filling station proprietor in a small Italian village.

Where Mountains Float (30 minute extract), which was made for the Danish Government Film Committee, is an impressive film, set in Greenland. Its excellent colour photography shows something of the life of an isolated Eskimo family and, in particular, that of the young son, who has to go to hospital in the nearest town and there discovers the advantages of civilization.

The Travel Game (30 minutes) is a colour film which was made by British Transport Films and received the premier award in the Public Relations Section of the 1959 Harrogate Film Festival. It tells of a passenger on the Hook Continental express who starts to guess the destinations and occupations of his fellow-travellers, only to find how mistaken he has been.

On this occasion light refreshments will be served in the Library *before* the programme, from 5.45 p.m. Tickets of admission are not required and Fellows are entitled to introduce two guests.

INDUSTRIAL ART BURSARIES EXHIBITION

The Exhibition of winning and commended designs submitted in the 1959 Industrial Art Bursaries Competition will be shown at the College of Art, Backhouse Park, Sunderland, from 5th to 17th December.

THE SOCIETY'S CHRISTMAS CARD

It is anticipated that by the time this issue of the *Journal* is published, the stock of this year's Christmas Card will have been exhausted.

There is, however, a small supply of cards still remaining from previous years, and as these are undated some Fellows may wish to order them. There are two subjects to choose from, viz., a view of the Society's House from an engraving made by Thomas Malton in 1790 (illustrated on p. 512 of the *Journal* for 24th May, 1957), and a winter scene showing T. R. Crompton and his engine 'The Namur', painted by Miss Anna Zinkeisen (see p. 597 of the August, 1959, *Journal*).

The price of these cards, with envelopes, has been reduced to 10s. per dozen. No overprinting can be undertaken.

JOURNAL INDEX AND BINDING CASES

The index and title-page for Volume 108 of the *Journal* are in preparation and will in due course be available, without charge, to Fellows who ask for them. Orders for binding cases (with which copies of the index and title-page are supplied as a matter of course), price 7s. each, should be sent to P. G. Chapman & Co. Ltd., Kent House Lane, Beckenham, Kent, who will also undertake the work of binding at an additional cost.

ERRATUM

It is regretted that in the November *Journal*, two of the Figures illustrating Mr. Christopher Cockerell's paper on 'The Hovercraft and its Place in the Transport System' were accidentally transposed. The diagram which appeared as Figure 1 on page 885 should in fact have been printed on page 895 as Figure 11, and *vice versa*. The captions were correctly *in situ*.

MEETING OF COUNCIL

A meeting of Council was held on Monday, 14th November. Present: Mr. Oswald P. Milne (in the Chair); Mrs. Mary Adams; the Honble. G. C. H. Chubb; Lord Conesford; Mr. R. E. Dangerfield; Mr. Geoffrey de Freitas; Sir George Edwards; Mr. P. A. Le Neve Foster; Mr. E. Maxwell Fry; Mr. John Gloag; Sir Ernest Goodale; Professor R. Y. Goodden; Dr. Stanley Gooding; Mr. Milner Gray; Dr. R. W. Holland; Mr. J. C. Jones; Mr. Edgar Lawley; Sir Harry Lindsay; Mr. F. A. Mercer; Lord Nathan; Mr. Paul Reilly; Sir Gilbert Rennie; Mr. A. R. N. Roberts; Sir Philip Southwell; Professor S. Tolansky; Mr. G. E. Tonge; Mr. C. E. Vignoles, and Mr. Hugh A. Warren; with Dr. K. W. Luckhurst (Secretary); Mr. G. E. Mercer (Deputy Secretary), and Mr. J. S. Skidmore (Assistant Secretary).

ELECTIONS

The following candidates were duly elected Fellows of the Society:

Asafu-Adjaye, His Excellency Sir Edward, London.
Aubrey, Ralph, LL.B., Hale, Cheshire.
Atlas, Mrs. Anna Engelberg, New Providence, New Jersey, U.S.A.
Austin, Alfred David, London.
Baugh, Trevor John, Bodenham, Herefordshire.
Boden, John Colin, London.
Bradbury, Ronald, Ph.D., F.R.I.B.A., A.M.T.P.I., Liverpool.
Bright, Miss Audrey Florence, Windsor, Berks.
Brown, Kenneth Arthur, Leeds.
Brownridge, Mrs. Marjorie Jean, Edinburgh.
Buckle, Sydney H., Stockton-on-Tees, Durham.
Cameron, Professor Donald Ewen, M.D., Ch.B., D.P.M., Montreal, Quebec, Canada.
Caulfield, Mrs. Helen Mary, Grimsby, Lincs.
Clunie, Mrs. Florence, West Bromwich, Staffs.
Day, Ronald Charles, Liverpool.
Dobbs, Mrs. Mary, Hull, Yorks.
Francey, David Maxwell, Glasgow.
Griffin, Ernest John, A.M.I.Struct.E., Hounslow, Middx.
Harland, Robert Geoffrey, Shotton, Co. Durham.
Harwood, Reginald Ernest Frederick, London.
Howitt, Leonard Cecil, Dip.T.P., D.A., D.P.A., F.R.I.B.A., M.T.P.I., Sale, Cheshire.
Hutchinson, Harold Jan, D.A., N.D.D., Shrewsbury, Shropshire.
Ichida, Mrs. Yae, Kyoto, Japan.
Jamieson, John Simpson, D.A., Keighley, Yorks.
Jamieson, His Excellency Stewart, M.A., Canberra, A.C.T., Australia.
Jones, Roy Stanley, L.D.S., Solihull, Warwickshire.
Kwaku, Tennyson Emmanuel, B.A., Accra, Ghana.
Lesage, The Honble. Jean, B.A., LL.L., P.C., Quebec, P.Q., Canada.
Lowry, Donald Marcus Osborne, M.A., M.R.C.S., L.R.C.P., Wirral, Cheshire.
McClelland, Stewart Winning, B.S., L.H.D., D.D., Litt.D., Indianapolis, Ind., U.S.A.
McCowan, Carl Eric, Georgetown, British Guiana, South America.
Meredith, Mrs. Marie-Anne, Leamington Spa, Warwickshire.
Mottahedeh, Rafi Y., Stamford, Conn., U.S.A.
Nimmo, Miss Lorna Muir, Waverley, N.S.W., Australia.
Oyenubi, Remilekun Olayinka, Nigeria.
Penna, Colin Eric, LL.B., Crook, Co. Durham.
Quick, Thomas Edwin, Bromley, Kent.
Ratcliffe, George Albert, Stoke-on-Trent, Staffs.
Read, Joseph Stanley, Leicester.
Rees, Alun Morgan, Yeovil, Somerset.
Regan, Frank, F.L.A., Brierley Hill, Staffs.
Roberts, Mrs. Sylvia Gladys, King's Lynn, Norfolk.
Slade, Leslie Howard, F.S.A.Scot., Arreton, Isle of Wight.
Spackman, Alan John, Caterham, Surrey.
Spicer, Roy Herbert, Broxbourne, Herts.
Stocken, Anthony, A.R.I.B.A., Salisbury, Wilts.
Todhunter, Gavin Warren, London.
Webb, Donald, Geelong, Victoria, Australia.

Wilson, Andrew Tufts, B.Sc., A.M.I.C.E., M.E.I.C., P.Eng., Town of Mount Royal, P.Q., Canada.
Wray, Frederick George, London.

The following candidate (Examinations Silver Medallist) was duly elected an Associate of the Society:

Amas, Miss Valerie June, London.

The following was duly admitted an Institution in Union with the Society:

The College, Swindon, Wilts.

The following Company was duly admitted into association with the Society:

John Thompson Limited, Ettingshall, Wolverhampton.

VACANCY ON COUNCIL

Mr. Antony Hopkins was elected to fill the vacancy on the Council caused by the resignation of Sir Charles Dodds.

COUNCIL CHAMBER CLOCK

It was reported that a clock had been presented to the Council Chamber by a donor who wished to remain anonymous, and this gift was gratefully accepted.

HONORARY CORRESPONDING MEMBERS IN THE UNITED STATES

It was agreed that Honorary Corresponding Members of the Society in the United States should *ipso facto* become Benjamin Franklin Fellows.

EXAMINATIONS

It was reported that 41,388 entries had been received for the autumn series of examinations, an increase of 3,388 over the corresponding figure for 1959.

PROVINCIAL ACTIVITIES

Agreement was reached on the principles to be applied to the conduct of activities of the Society taking place in the provinces.

INCREASED EMOLUMENTS FOR THE SOCIETY'S STAFF

Approval was given to proposals made by the Finance and General Purposes Committee for certain increases in the emoluments payable to the Society's staff.

ANY OTHER BUSINESS

A quantity of financial and other business was transacted.

'THIS ENGLAND': CHANGE IN A LIFETIME

The Inaugural Address of the 207th Session by

OSWALD P. MILNE, F.R.I.B.A., J.P.,

*Chairman of Council of the Society, delivered to
the Society on Wednesday, 2nd November, 1960*

The work of William Morris as a designer and decorative artist and also as a writer, poet and social reformer has always been familiar to me. As a member of the Art Workers' Guild, which he joined in 1888, I knew that he had greatly influenced the work of architects towards the end of the Victorian era. He was an active member of this Society and its Applied Art section.

Finding myself, a short time ago, not far from Kelmscott, the Gloucestershire village where he made his country home, and after which he named his famous press, I determined to make a pilgrimage there. At the end of the village street and close to the banks of the infant river Thames stands, sequestered, the little grey stone and steep gabled Manor House, enclosed behind its high garden wall. This was a perfect retreat for Morris, lover as he was of the English countryside and the traditional craftsmanship of the English builders.

Morris seems now to belong to another age than our own, but on the very day that I made the pilgrimage I read in the daily press a letter from Sir Sydney Cockerell, correcting some facts which had appeared about Morris. Morris died in 1896. Sir Sydney, who is still alive, was, as a young man, Morris' librarian and secretary, and recalling this one realizes what a staggering world of change has taken place in the span of one life.

Morris and Ruskin before him viewed with horror and loathing the devastation and ugliness which had followed the invention of the machine and the march of the industrial revolution. They passionately felt that the grime of the coalfields and Black Country, the pall of smoke hanging over the factory towns of Lancashire and Yorkshire and the dreary scene of the Potteries, were a reproach to our civilization. In their day factories and works continued to expand haphazard and after exhausting one area moved on to lay waste another. No one thought seriously of rehabilitation as a practical possibility, and the blight of seemingly endless destruction spread unchecked. In the wake of industry, unconsidered and shoddy building was encircling the towns and engulfing villages.

If to-day Morris were to revisit the haunts he loved so well, he would find a tarmac road being constructed beyond his gateway and beside the river bank, to serve an R.A.F. station which is taking untidy shape in the once quiet water meadows. He would see not far away the giant metal pylons and power wires striding the Gloucestershire landscape and he would question whether Englishmen and women of to-day cared much more for their heritage and environment than

did the Victorians whom he had striven to rouse to his own sense of outrage. 'The worst which can happen to us', he wrote in 1887, 'is to endure tamely the evils that we see . . . no . . . trouble is so bad as that'.

One could not but reflect on what had happened in the intervening years. Morris' day was that of the railway train, the horse-drawn vehicle and the bicycle (without pneumatic tyres). Now breathtaking inventions and amazing developments in the application of scientific knowledge and a social revolution have affected the way of life of every one of us. In his day the motor car and the aeroplane were but dreams; man still laboured with muscle and sinew as he had done throughout the world's history, and the country-wide provision of electric power was but in its infancy.

His dynamic teaching did not fall on completely deaf ears. He not only aroused the national conscience to social conditions, but opened men's eyes to the injuries which in the name of progress were disfiguring their matchless heritage—the natural beauties of England—and to the need to press for action before it was too late.

The recognition that some planning of our environment was essential caused architects to make a study of town planning as it had been practised by the Romans. The English genius had never taken kindly to conscious planning. In the growth of their towns and villages, they had been guided by a native and intuitive sense of doing things and using materials in the right way. Whilst life moved in a leisurely manner this was all very well, but in the hurlyburly of the industrial revolution and its aftermath the innate sense of craftsmanship had been stifled by the dominance of the machine.

Under this renewed urge to plan, at the end of the nineteenth century, some tentative efforts were made at Bourneville and Port Sunlight properly to lay out industrial villages. Ebenezer Howard, who was a pioneer in the new movement, broached many ideas of practical planning in his book *Tomorrow*, published in 1898. He was able to implement his thesis at Letchworth, where, in conjunction with Raymond Unwin, who became a recognized authority on housing, the new town was planned and was followed by the successful garden suburb at Hampstead.

In spite of a few good schemes, however, mean streets and dreary localities continued to spread around the towns, and encroached like an evil rash over green fields.

During the long period when railways were the chief means of getting about, new building had huddled as closely as possible to the railway stations, but with the advent of the motor vehicle it was pushing out farther, and all the old highways became a ribbon of development. Unspoiled country was on the retreat, and presently, if the attitude of *laissez faire* had been allowed to continue unchecked, little of the rural delight of England would have remained unsullied.

The pressure of public opinion against this state of affairs became so strong that Parliament was forced to take action, and the first Town and Country Planning Act was passed in 1909. Since that time a stream of legislation, in efforts to control and regulate planning and building development in the public interest, has found its way on to the Statute Book. The Planning Act of 1954 was the thirteenth Act

of Parliament dealing with this intricate subject. So involved had legislation become that the Acts of 1925, 1932 and 1947 each set out to make a fresh start.

By these various Acts many regulations and restrictions have been imposed on building developments, and powers have been given to Public Authorities not only to approve planning, but to reject what they consider inappropriate or unworthy in design for new buildings. Buildings of historic or architectural importance have been given protection, whilst advertisements in public places and the pollution of smoke have been brought under control. Green belts around London have been demarked where building development may not take place, and even trees have come under the official eye, and cannot be cut down without permission.

Public concern over the loss of beauty and amenity in both town and country has been demonstrated by the formation of voluntary bodies, whether nationally or locally, all set on the grand purpose of preserving England as a green and pleasant land. We have such organizations as the Council for the Preservation of Rural England, and many local preservation and amenity societies, one of the earliest of these being the Hampstead Heath and Old Hampstead Protection Society, which set the pattern for others all over the country, and whose rôle is largely to keep the authorities alive to their powers and to criticize if these seem to be wrongly used. A Royal Fine Art Commission was set up by the Government in 1924 to act as an independent advisory body which might be called upon to pronounce aesthetic judgement on important matters of development and building, and by an extension of powers granted in 1933, it has since been able to take the initiative when national amenities are threatened. Lately a Civic Trust has been founded to advise and assist in town preservation and development, and already it has some outstanding achievements to its credit.

There is no doubt that without all this activity the position would have deteriorated rapidly, and whatever the disadvantage of control and regulation, town and countryside have at least been saved from some of the worst evils.

If the 'thou shalt not' of negative legislation could of itself bring about good planning and good design we might now have fewer anxieties, but unfortunately it can only prevent the worst of crimes. In the event, it is only the planner or architect with insight and imagination and the seeing eye that raises an enterprise above being pedestrian, and gives to architecture commodity and delight. Nor can we disguise the fact that too many rules and regulations, which are often short-sightedly administered, breed their own frustrations and may shackle inspiration and the imaginative solution, reducing creative work to a dull uniformity.

Mr. Heap in his book dealing with the Town and Country Planning Act of 1954 remarks, 'What Town and Country Planning is now most in need of is a period of Parliamentary peace, and a reasonable span of years in which there will be no more digging up of the statutory foundations of the control of land use'. Every architect and town planner knows how numerous are the authorities he has to satisfy, the many hurdles he has to surmount, threading his way through the official labyrinth, often an exasperating and time-wasting process. Every new Act of Parliament brings into being more officials to administer and enforce its provisions, with an unproductive piling up of forms and paper work.

In spite of all that has been done to preserve amenities, the problems we face to-day are more urgent and complicated than ever before, and it is even more important than in Morris' day that we should not endure them tamely. A teeming, affluent and increasing population makes ever greater demands on land use, not only for living space, but for the expansion of industry in supplying the goods the people want. An unending stream of motor cars and transport vehicles flows from the factories, and this alone poses immense problems of movement and parking in both town and country. Some 300,000 new houses are wanted every year, and so rapidly does the demand for power increase, that three or four vast new power stations have to be erected in the same period. In addition, the desire for better facilities for recreation and playing fields, for a new and more ample system of roadways, all make demands on our limited resources of land, where food essential to our existence should be growing.

Aspects of these intractable problems are exercising technical and specialist organizations. Theories and suggestions for dealing with the congestion of traffic in our towns are being put forward, some of them radical: complete modernization of Town Centres is advocated in some quarters. This Society, with its broad cultural outlook, its historic interest in everything to do with industry and commerce, its achievements in promoting the industrial arts and its practical work in the preservation of English country buildings, can view the problems in a broad and balanced way and from many angles and can, I think, make a considerable contribution towards their solution. It is in fact now setting in train a pilot study of the impact of industry and social development on town and country where our historic associations and amenities are progressively threatened.

I am not for a moment suggesting that the ideas put forward in this paper are anything more than the personal views of one who, as an architect, has had a lifetime's familiarity with the practical solution of planning problems; but this I am sure will be generally agreed: that there is no comprehensive solution to the replanning of our towns so as to deal with modern traffic. Every town poses its own problem, and a right judgement of the means to be employed in each particular case is necessary. Some people may advocate a theoretic and scientific approach based upon a host of statistics. This may be valuable, but we are, I suggest, as likely to find workable solutions in facing the problems empirically, backed by a general grasp of the questions at stake.

The appearance and character of our countryside and our towns have grown through our history and every town has its own individuality. If we apply any kind of standardized or theoretical solution we shall be in danger of losing the very soul and spirit of England. Let us not be stamped by the planners into the wholesale replanning and rebuilding of the historic parts of our cities and towns. It is because every quarter of London, however much it may have been overlaid by Victorian expansion, yet retains something of its past identity that this vast city is saved from being just a large waste of bricks and mortar. In the same way, in each of our towns it is the High Street, the market place, the church, the public buildings and the conformation of the central streets which proclaim its history, character and growth. The importance of preserving historic and interesting

buildings and the charm of old streets and quarters must not be lost sight of; for to put it at its lowest, what would our towns and our country lose in the tourist market if there remained nothing to distinguish them from cities of the New World? It would no doubt be quite possible to turn each of our cities into another Notting Hill Gate; traffic might flow more easily—but what an irreparable disaster it would be? We may ask, too, will sweeping changes from the existing to the 'modern' delight the next generation? We flatter ourselves that we are building in a style fitting to a mechanized age, and therefore in a manner which no one can impeach. Is not our town building to-day, however, conditioned almost entirely by economic considerations, and by the mentality of the speculator, dominated by the idea of the greatest financial return? That is not the climate in which fine architecture can flourish. Floor is piled upon floor, all of a minimum height, with a monotonous repetition of parts. With all our prosperity, are we to be satisfied with the stark and featureless boxes that are becoming so boringly familiar? Are we to believe that great industrial concerns or our Public Authorities cannot afford some gesture towards gaiety and diversity, perhaps in an interesting skyline, or by a gain of light and shade in a modern idiom—a quality which was once provided by the column and the portico?

To return to the two most urgent problems of planning development—housing and all that that implies for the increasing population, and the problem of the motor car: the creation of new towns has undoubtedly done something towards checking the sporadic spread of London, but have we not built them too near to the existing city—so near that they have little chance of developing as towns in their own right, but must be satellites with an attraction towards the massive centre? The inhabitants will continue to look to Oxford Street for their dresses and to the West End for their entertainment. Have we not developed these towns too much on garden suburb lines, rather than as compact urban neighbourhoods, spreading them too loosely over invaluable agricultural land? We have in the counties of England country towns well distributed. It would seem logical to encourage the enlargement of these (a step that the L.C.C. has already taken in a few instances) where the new population would find already settled conditions and where public services would not need to be started from scratch. *Au fond* it is the location of industry which governs the distribution of population, and so facilities for works and factories must be parallel in extent with any shift of people.

The operation of enlarging an existing town should be so planned as to give scope for the regeneration of the town without tearing down its heart. The aim should be a renewal of the drab outskirts and the formation of a secondary centre, a 'place' which might relieve congestion in the older quarters. If a sufficient area were dealt with so as to provide car parking space in the vicinity, the very convenience to the public would attract shops of a good class to this rebuilt area, with the new housing and a factory quarter not far away. If by chance the Municipality were contemplating the construction of a new Town Hall and its offices, and were to site them on the new 'place', it would act as a magnet to attract business of all kinds, making a success of the town's enterprise.

It is true that every town is required by statute to prepare a plan showing its

proposals for future development for submission to the Ministry of Housing and Local Government, and many authorities have advanced a considerable distance with the prescribed procedure. This is all to the good in providing a guide to probable reconstruction and growth. But their proposals will need constant review in the light of changing conditions and these plans should be three-dimensional. An imaginative architect should be employed in the planning of each township. He should study its character and peculiar individuality, and should be working out ideas for its expansion on a comprehensive basis. This might well be an employment for Rome scholars. The Rome Scholarship is one of the foremost prizes for young architects after they have graduated in their profession. The winner, who must be a young man of promise, is enabled by his scholarship to spend two years in Rome studying architecture and civic design, and can thus widen his architectural outlook. What an encouragement it would be for such a young architect, after leaving Rome, if he were employed by a Local Authority to draft its town's future shape. His plans and ideas would of course be subjected to surveillance by those of greater experience, before actual work was put in hand.

Civic and local pride in a town's amenity should always be encouraged, especially in any schemes of rehabilitation. Each town should wish to outstrip its neighbour in its comeliness and in attracting tourists to pay it a visit.

When reconstruction takes place, no doubt every means of ensuring convenience for traffic and pedestrians must be considered, and in certain cases unusual expedients may be justified, but let us be careful of those who advocate overhead pedestrian walks and shops raised to upper levels. Humanity jibs at climbing steps or even using moving stairways. The latter would be better used for providing access to under-crossings at busy centres. If these underways are spacious, well lighted and gay with shops and cafés, they can become part of a city's life, as examples in Vienna and Rome can show.

Dealing with the motor car and its parking is a baffling conundrum. Is it not absurd that stationary cars can be left for hours and even days in space in the streets, free of rent, space designed for and needed for moving traffic? Off-street parking is certainly a convenience to the public when it can be provided, but private cars should be discouraged from entering the central areas of towns, and nothing would bring this about more quickly than obliging motorists to drive their cars away if no off-street parking could be found. There is need for large parks, on two or three levels, on the outskirts of towns, and from here public transport could be used to complete the journey.

In London, and perhaps elsewhere, an idea which might be explored is the formation of semi-basement car parks under the whole length of the driveways, such as those which encircle the Royal Parks. The road for the traffic and pedestrians could be raised on legs into a terrace some three or four feet above the ground level, whilst below it could be a sunken parking roadway high enough only to take private cars, perhaps 7 ft. 6 in. in the clear, and this would be lighted and ventilated from the sides. This would enable both motor traffic and pedestrians to reach either level by means of short ramps. Having parked a car, one would mount to the upper level whence one's destination could be gained by public transport. The low

terrace of the roadway would interfere little with access to or sight of the park. No doubt many objections would be found to such a scheme, but some drastic adjustment of accepted ideas will become necessary before the motor car problem can be solved.

The span of a lifetime is but a short period in the unfolding history and ever-changing picture of the English scene; but a lifetime spent in the first sixty years of the twentieth century has seen changes quite unprecedented in any earlier period of the like duration.

The incredible advances in scientific knowledge have revolutionized man's outlook on the natural world. Invention of every kind has been stimulated, which has put into man's hands powers and machines which but a short time ago were but dreams, but are now transforming the whole pattern and tempo of our daily lives.

When the means of supporting life grows more abundant life itself increases and population multiplies. This happened in the time of the industrial revolution in the nineteenth century and the same phenomenon is repeating itself in the twentieth. The activities of our growing and affluent population equipped with so many and so great new powers are having a profound effect on our environment. New, urgent and intractable problems of preserving amenities confront us—greater than any which had to be faced in the past.

We must acknowledge that it was due to the ardour of William Morris and some of his contemporaries that appreciation and the care of historic and traditional building and the love of the countryside were quickened. It was through their labours that the first practical steps were taken to prevent the destruction of much of our priceless natural surroundings. In the intervening years much has been done to restrain, regulate and plan, so much so that we perhaps seem in danger of moving from carelessness to too much regimentation and uniformity. It is certain, however, that to-day there is a greater public awareness of the problems we are up against and a more active desire to keep a just balance between meeting modern needs and preventing too great a sacrifice of our cherished past—that is the challenge which this generation is called upon to meet.

Before his Address, THE CHAIRMAN reviewed some recent developments in the Society's work. After the Address, he proceeded to the customary presentation of the Society's awards.

The first award, of THE R. B. BENNETT COMMONWEALTH PRIZE, which had been made to Dr. E. W. R. Steacie 'for his contributions to the development of pure and applied science in Canada', was accepted on Dr. Steacie's behalf by His Excellency the High Commissioner for Canada.

THE CHAIRMAN then presented Silver Medals awarded for outstanding papers read during the past session to the following:

For Papers read at Ordinary Meetings

Sir Christopher Hinton and Sir William Holford. 'Power Production and Transmission in the Countryside: Preserving Amenities' (Joint Paper)



The High Commissioner for Canada accepting the R. B. Bennett Commonwealth Prize from the Chairman of Council

Dr. E. B. J. Postma. *'The Training of Staff for Foreign Posts: a Dutch Experiment'*

Miss Helen Munro. *'The Art of Glass Engraving'*

Christopher Cockerell. *'The Hovercraft and its Place in the Transport System'*

For Papers read at Meetings of the Commonwealth Section

William Allan. *'Changing Patterns of African Land Use'*

The following lecturer, who had also been awarded a Silver Medal, was unable to be present to receive it in person:

John Wilson. *'Blindness in the Commonwealth'*

Next, THE CHAIRMAN presented a THOMAS GRAY MEMORIAL TRUST Silver Medal to: Captain R. J. Ryder, for a deed of outstanding professional merit performed at sea

The next award was a HOWARD PRIZE of £50, presented to:

Dr. Kenneth D. Cochran, for his essay, *'The Status of the Petrol Engine in Light Road Transport, with a Note on a Method of Improving its Thermal Efficiency'*



The High Commissioner for Malaya receiving the Society's Commonwealth Film Award from the Chairman of Council

There followed the presentation of a FOTHERGILL PRIZE of £10 to:

V. Cable, for his essay describing 'Rescue from Crashed Fired Aircraft'

THE CHAIRMAN then presented the first Silver Medals to be awarded by the Society to outstanding students at colleges of technology, as follows:

Robert H. Davies (City and Guilds of London College)

Richard G. Foster (Royal College of Science)

David C. Horner (Manchester College of Science and Technology)

Peter Young (Royal School of Mines)

Finally, THE CHAIRMAN made the first presentation of the Society's COMMONWEALTH FILM AWARD. This was accepted by His Excellency the High Commissioner for Malaya, acting on behalf of The Government of the Federation of Malaya, to whom the award had been made in respect of the film, Master Farmer—Kum Yeng.

At the conclusion of these proceedings a vote of thanks to the Chairman, proposed by LORD BOSSOM, LL.D., F.R.I.B.A., J.P., a Vice-President of the Society, was carried with acclamation. The meeting then ended, and the company adjourned to the Library for tea.

THE TRAINING OF OFFICERS FOR THE MERCHANT NAVY

The Thomas Gray Memorial Lecture by

CAPTAIN G. W. WAKEFORD, M.B.E.,

*Director, School of Navigation, University of Southampton,
delivered to the Society on Wednesday, 9th November,
1960, with Captain L. G. Garbett, C.B.E., R.N.(retd.),
Chairman, Thomas Gray Memorial Trust Committee,
in the Chair*

THE CHAIRMAN: As this is a Thomas Gray Memorial Lecture, I think I should say a few words about him. Thomas Gray was Head of the Marine Department of the Board of Trade in the 70s and 80s of the last century, just at the time when shipping was advancing very rapidly. He was a very vigorous and forceful man, and tremendously interested in navigation and shipping. He supervised the formulation of the 'rule of the road at sea' and he was the author of those 'rules in rhymes' which are so familiar to all sailors.

The Thomas Gray Memorial Trust is administered by the Royal Society of Arts and it has, as its object, the improvement of the science of navigation and the development of the scientific and educational interests of the British Mercantile Marine. In this connection we have, from time to time, organized a lecture such as you are going to hear this afternoon.

We are very fortunate in having as our lecturer Captain Wakeford, the Director of the Navigation School at the University of Southampton. Captain Wakeford served his apprenticeship in sailing ships, and he has been an officer in the Ellerman & Bucknall and James Norse Lines. After obtaining an Extra-master's Certificate at a particularly early age, he joined the New Zealand Shipping Company and was responsible for instructional duties in that Company's cadet ships. In 1935 he was appointed Head of the School of Navigation at Southampton and he has been responsible, in addition to his normal duties at the School, for the training during the war of officers of the Royal Naval Reserve, the R.A.F. Reserve, and certain military units. He has also been responsible for the training of Principals for the Navigation Schools of several foreign countries, and of officers and midshipmen of the United States Navy, the Burmese Navy, and the navies of other foreign countries.

During the fourteen years in which he has been at Southampton at the present headquarters, he has had 8,000 student-officers from 52 different countries, and since its start in 1937 2,500 cadets from 37 different countries have passed through his hands. I only read, the other day, an article in *The Hampshire Telegraph* in which it said that Captain Wakeford is 'the man who transformed a school with tiny beginnings and a handful of students into a mammoth establishment, with no less than 131 resident cadets and 160 student-officers'.

Captain Wakeford was awarded the M.B.E. in 1951. He is the holder of the Polish Gold Cross of Merit and an Officer of the Belgian Order of Leopold I (Military Class). He has been a Vice-President of the Institute of Navigation and is a Fellow of this Society and of the Royal Astronomical Society. With such a record, I am sure you will all agree that he is highly qualified to give us his Address this afternoon.

The following lecture was then delivered.

THE LECTURE

The memory of Thomas Gray is kept fresh by the work of the Thomas Gray Memorial Trust Committee of which Captain Garbett is Chairman. Their many activities in fostering the training, education and welfare of seamen are well known to my audience. Captain Garbett drives this committee and is constantly producing new schemes and ideas. He was trained at that great training establishment H.M.S. *Worcester*. In this respect may I quote from a letter written to me by my dear old friend Captain Gordon Steele, V.C., late Captain Superintendent of the *Worcester*, a great worker in the field of training young seamen, who unfortunately cannot be present to-day. 'May I first congratulate you most heartily on what I consider rising to the very height of your profession, in being selected to give your lecture at the Royal Society of Arts.'

The last time I was honoured by being asked to address the Royal Society of Arts was on the 22nd March, 1944, and like to-day, I was privileged to have a very distinguished chairman. In 1944, it was Sir Philip Devitt, the then Chairman of the Board of Governors of the Nautical College, Pangbourne. With your permission, I should like to quote from his introductory remarks. He said that:

as long ago as 1860 my father took a great interest in training officers for the Merchant Navy in our sailing fleet between this country and Australia. In the eighty years which have passed since then both my father and I have given much of our time to this matter.

We all of us, I believe, in our hearts, really regret that that natural nursery of sailors, the sailing ship, has gone, for in them sailors learned real seamanship, the building of character, and the meaning of that word—which means so much—tolerance.

In a summing-up, which I thought was much better than my paper, Sir Philip said:

I listened with great attention to the constructive remarks made by Captain Wakeford at the end of his paper, and I think that in the main we agree with him. For, generally speaking, these remarks do not quarrel with those contained in the report of the Merchant Navy Training Board which I have already referred to, and I am glad that we are in agreement in that respect.

I feel very honoured, Mr. Chairman, at again being asked to address the Royal Society of Arts, and especially at being entrusted with the Thomas Gray Memorial Trust lecture. I feel that it would be appropriate in such a lecture to speak about progress, review changes and make suggestions for improvement in the training of the deck officers of the sea-going side of what I consider to be the most important industry in this country: the shipping industry. Some people thought I might criticize some of the defects in training, but I think it is better to use bricks to build rather than to throw.

In June, 1943, the Merchant Navy Training Board published its outline plan for the post-war training of navigating officers and deck ratings for the British Merchant Navy. The plan was agreed by the representatives of all the government departments concerned, as well as by the representatives of both the shipowners and seafarers, together with those of the pre-sea training establishments, the Association of Education Committees, and of the Association of Navigation Schools.

It is still the latest and most authoritative publication on training for navigating officers and deck ratings.

Since its inception in 1937, the Junior Department of the School of Navigation, University of Southampton, has always been run broadly on the lines laid down in the outline plan of the Merchant Navy Training Board. As the recommendations of the Board and the principles upon which the Southampton Cadet course has always been run are practically similar, we should try to find out whether it has been successful. I think I can claim that the answer is 'yes', which must be gratifying to the Board; it certainly is to us. The shipping companies tell me that they like the Southampton cadets—they stay at sea; some companies tell me over 95 per cent of our young men remain with them after obtaining their Second Mate's Certificate; and in September, 1949, the Ministry of Transport increased the cadets' remission of sea service from half-time of six months to full-time, to count up to a maximum of nine months—a very great honour. In addition, this method of training has been copied by the J. L. Lauritzen School at Svendborg in Denmark and by Cardiff, which we regard as our younger brother, with great affection. The Defence Department of the Union of South Africa has recommended that the *General Botha* be remodelled on what I think I may describe as 'Southampton lines'.

Perhaps I should describe our Principles of Training.

The sea is a different element from the land and its workers have to learn sea ways. As in other professions, training on the right lines is most important. Without it many good boys will become unhappy, discontented, inefficient, and liable to change their profession without much thought.

In planning a course for cadets who will enter the Merchant Navy, it is essential to consider the kind of life for which these boys are being trained, and what their captains and officers require from them. The Merchant Navy is part of the shipping industry, but much of the sea-going side is run on the lines of a service. It is very different from the Royal Navy. It might be said that the Royal Navy creed is 'Press on and destroy the Queen's enemies', whereas the Merchant Navy motto could be, 'Arrive safely and deliver your passengers and cargo in good order'.

It is on the officers and men of our merchant ships that so much of the future of this country depends, because efficient movement of our sea-borne trade governs the lives and livelihood of us all. Merchant seamen have to meet all races in the business of commerce without the protective cloak of territorial immunity which covers the courtesy visits of our armed forces.

The usual merchant ship carries three or four deck officers, who at sea and in port are busy men. They have little time, irrespective of inclination, to control closely the moral and intellectual development of cadets whose contemporaries ashore are still under the protection and care of their parents, relatives, ministers, schoolmasters and others who have a special interest in them. The merchant naval cadet leads an unprotected life because he is segregated at sea and sometimes left to his own devices in ports of a very different nature from our towns and villages.

Character training is therefore considered to be by far the most important part of a course which tries to prepare a boy for life at sea. The potential officer is made to realize that friendly relations between all those who live, work and travel in ships are essential for happiness and efficiency. Our country is widely judged by the officers and cadets of our merchant ships and it is essential that they

should have high qualities of integrity, tact, loyalty and efficiency, combined with the will to stay at sea and to be happy in their profession.

Considerable attention is given to human relationships and social sense to try to produce a young officer with poise, tolerance, quiet self-confidence, and good manners, whose interests are not confined to the technical side of his profession and who will be at ease with the many and varied people a merchant seaman meets. Such an officer will win their confidence and goodwill to the benefit of his company, his ship and himself.

Through its methods of training, the School of Navigation, Southampton tries to produce cadets who:

- (a) can be relied upon to carry out orders;
- (b) are resourceful, self-reliant and trustworthy;
- (c) have a strong pride in their Service, their ship and themselves;
- (d) are well-mannered, tactful and behave themselves as officers and gentlemen;
- (e) are alert, have an awareness of danger and dislike shoddy or scamped work;
- (f) are highly disciplined and, in an emergency, not afraid to take charge;
- (g) have initiative, a sense of responsibility, and the ability to get the best response and co-operation from all those with whom they have to work and associate;
- (h) speak the truth in matters of fact, and do not grumble more than they can help;
- (i) have a thorough knowledge and grasp of the elementary navigation and seamanship required from a cadet in a merchant ship; and are quite sure that, compared with any of their officers, they know practically nothing of the mariner's art.

A cadet finds that the School demands his highest qualities of character and does its utmost to foster those fine enthusiasms which exist in abundance in most young people.

Southampton cadets are taught the habit of hard work. About one-third of the work is practical, some of it involving hard manual labour. Weather and other extraneous conditions are never allowed to interfere with the training programme. Discipline is very strict and no excuse is accepted for ill-mannered behaviour, disobedience, unpunctuality, untidiness or slackness. All lawful orders are to be obeyed implicitly and at the double. If, in the opinion of responsible officers, it is discovered that a cadet is not suited for a career as an officer in the Merchant Navy, his parents will be asked to withdraw him. This involves no disgrace. Cadets whose behaviour or industry is not up to the School standard are removed.

From the day he enters the School a cadet is treated as a young man and expected to behave as such. He finds that there are no distinctions of wealth, class or race; there are only Southampton cadets. He is immediately given responsibilities and often he has to think and act on his own. He has to look after himself, his gear and any School property of which he is in charge and he is never allowed to evade these responsibilities. Efficiency, initiative, enthusiasm and conduct govern promotion to executive rank, and equal opportunity exists for all cadets.

Cadets are encouraged to meet other people and to attend social gatherings.

They invite distinguished people to their formal guest nights and are required to entertain them without the help of officers. Official or private visitors to the School are always taken round by cadets, unless their call concerns technical matters.

Cadets are given compulsory instruction in ballroom dancing and conventional social customs. Organized parties are encouraged to visit opera and concerts. Lectures are given on a variety of non-professional subjects and visits are arranged to local and national establishments, including museums and art galleries.

The School exists to provide specialized pre-sea training and does not undertake general education, as such. It is therefore essential that boys should have a sound general education before they enter the School, partly so that they may derive the greatest possible benefit from their studies, and partly so that they can make the best of their life at sea, where they are often thrown very much on their own resources for amusement and recreation.

The School believes that such an education, with a major emphasis on the humanities, plus adequate mathematics and general science, is of more importance to a Merchant Naval Officer than to practically any other profession or craft. Unlike the shore man, the young seaman cannot attend further educational establishments.

Apart from classwork, the Junior Department is largely run by the cadets; the staff watch closely and criticize freely, but do not interfere except to prevent a serious mistake.

Every part of the cadets' routine is specifically utilized as character training. The uniforms, the drill and the pattern of the life in the School are all training devices and a means to an end.

There are, of course, many other training establishments throughout the country. They are of various types, are inspected by the Ministry of Education and Ministry of Transport and I have heard of the success they achieve.

Nevertheless, from remarks made at public sessions of the Association of Navigation Schools' Annual General Meetings, it appears that some shipowners are dissatisfied with the educational level of some of the new entrants, and have indicated that a number of their apprentices lack such qualities as a sense of responsibility, manners, social sense, self-confidence, and a pride in their profession and themselves. A number seem unhappy in themselves and their work. Shipowners are the customers, and if they are dissatisfied it is the duty of the training establishments to try to put matters right. The Ministry of Transport seem dissatisfied with the educational level of many students presenting themselves for examination for Second Mate, particularly in pure and applied mathematics and English; and instructors of navigation schools occasionally find that the educational level of the students returning to study for their Ministry of Transport certificates is low, and that they have to start a student's course by teaching him basic mathematical principles.

The young men concerned may have had pre-sea training—most shipping companies state that they prefer boys from pre-sea training establishments, but experience has shown them that there are not enough to meet all the demands of the industry. Shipowners therefore have to take boys without pre-sea training,

and according to the rules of the Shipping Federation Limited, such boys are required to have passed the General Certificate of Education at Ordinary Level in mathematics, English language, and two other subjects.

Those who have pre-sea training are usually taught most of the Second Mate's syllabus. They then go through roughly the same course a second time by correspondence course, and then a third time when they study for Second Mate. This repetition is a great waste of time: possibly because the three- to four-year apprenticeship is too long for them to retain their interest. Many forget much of what they learned during pre-sea training, and do not take a great interest in the correspondence course.

REASONS FOR SUGGESTED ALTERATIONS IN THE TRAINING OF NAVIGATING OFFICERS

It may help if we consider the possibility of improving both the education level of new entrants and their method of training. It is many years since the present system of training at sea, that is, the four-year apprenticeship, was introduced; it was in the days of sail, and was designed to train young men as sailing-ship officers.

In the days of sail the qualities of an officer could probably be put in the following descending order of importance:

- Seamanship
- Navigation
- Carriage of Cargo

for these reasons:

Seamanship

As the safety of the sailing ship depended very much on the officer's ability to handle a vessel under sail in all weathers this was of primary importance. To handle such a vessel required great skill, much experience and, since a major calamity could occur almost instantaneously, it was important that every watch-keeping officer should be fully able to appreciate the conditions in which his vessel was sailing and himself know the appropriate action to take in an emergency *without reference to the Master*. Consequently, it was essential for every watch-keeping officer to have had many years' practical experience.

Navigation

In the days of sail the only instruments in common use for navigation were log, compass, sextant and chronometer—all relatively simple instruments to use. The person using them needed only elementary mathematics to be able to estimate his position with their aid.

Cargo Work

This also, in those days, was much more elementary than it is to-day and the rules of cargo carriage and stowage, etc., were much simpler.

Compare these requirements with those of the present day:

Seamanship

Seamanship is now almost entirely confined to the knowledge of ship maintenance, derrick gear and ship-handling. Of this work the first two items could be learnt by a youth of reasonable intelligence in a matter of months.

The responsibility of an officer of the watch for ship-handling is restricted to the use of helm and, extremely rarely, engines for the avoidance of collision. His decisions can make him anxious and be far-reaching, his responsibility for life and property heavy, but not until he becomes Master is it likely that he will have to execute difficult and intricate manoeuvres with his ship.

Navigation

Entirely new methods and new instruments are now in common use at sea. To understand both the method and the instruments, particularly their limitation and possible errors, it is essential for officers to have a far greater knowledge of applied mathematics and electricity than was necessary fifty years ago.

Cargo Work

This also has become more intricate and scientific and demands greater knowledge of several branches of physics, mechanics and chemistry. Moreover, international competition is far keener to-day and the need for perfection in out-turn of cargo is of inestimable importance. In this country we live by trade, and if we cannot carry efficiently the goods produced by our merchants, manufacturers and workers, this country will be lost.

Qualities as an Executive Officer

In the days of sail, control of the crew was exercised by strength of personality, often belligerent, and by economic conditions. To-day it is equally important to have strength of personality, but the other factor exercises less pressure. It is now far more necessary for officers to be properly trained in the way they should behave towards crew, passengers and company representatives; and also for them to recognize the value of self-discipline. In these days it is man-management and human relations which count.

From the foregoing the following three points emerge:

1. There is far less seamanship for an apprentice to learn now (not to be confused with seamanship learnt as a junior officer) than there was a hundred years ago or less.
2. A considerably higher scientific and mathematical level of training is now necessary if full advantage is to be taken of modern and expensive equipment for the navigation of the ship and handling of cargo; and
3. If an officer is effectively to control his crew and carry out his duties as an executive, attention to the proper development of his character and personality is most important.

From this it appears that:

Better use could be made of a young man's time between the ages of 16 and, say, 22 than is at present the case. If a four-year apprenticeship was sufficient to teach a young man the seamanship he needed to be a competent officer of the

watch in a sailing-ship, then the period of a four-years' apprenticeship is longer than necessary for him to learn the reduced amount of seamanship before becoming a junior officer in a modern passenger or cargo ship.

As a greater knowledge of pure and applied mathematics is essential, a boy should continue his general education longer than he did when he went to sea as an apprentice in sail.

Training and development of his personality and character is most desirable.

Pre-Sea Training Should Help

- (a) To develop character and serve as a half-way step from home life to sea life;
- (b) to adapt the cadets to life at sea, with its sudden loss of parental advice and control;
- (c) to teach cadets to gain self-confidence;
- (d) to teach them to accept discipline;
- (e) to teach them to use authority wisely;
- (f) to give them technical training in theory and practice.

SUGGESTIONS FOR IMPROVEMENTS IN TRAINING OF NAVIGATING OFFICERS FOR THE MERCHANT NAVY

My suggestions for improvement come under three headings, all of which envisage a reduction in the four-years' apprenticeship as it applies to-day and incidentally might provide a shipowner with junior officers at an earlier age. Firstly, a change in pre-sea training; secondly, the introduction of a sandwich course for apprentices whether pre-sea trained or direct entry; thirdly, the introduction of a scheme for older boys of up to 18 as envisaged in the Outline Plan of the Merchant Navy Training Board.

Change in Pre-Sea Training

Firstly, in those establishments taking boys of post G.C.E. level I would suggest that during their course the teaching procedures be progressively altered and made much more like those of a university: that is, that the cadets be encouraged to work on their own, using the library, and that the instructional staff model themselves on the university tutor rather than a school teacher. When these boys get away to sea they will have to work on their own, and if they can be trained to do this during their pre-sea training they will have the principles of self-study inculcated. They are more likely to apply themselves diligently to their correspondence courses and, at the same time, take greater advantage of the many and excellent facilities offered by the Seafarers' Education Service from the College of the Sea, an organization whose work, I sometimes think, is not sufficiently well known.

The pre-sea syllabus to be altered so that about 75 per cent of the class-room work should consist of pure and applied mathematics with nautical bias to hold interest: electricity (with particular reference to navigational problems and equipment): nautical astronomy but not navigation (knowledge of theoretical navigation can be acquired from books and, acting on our advice, at least one of our candidates

whilst waiting to join Southampton as a cadet has obtained a G.C.E. in navigation), and a considerable amount of laboratory work, and English; also some 'Arts' subjects to widen outlook; and the remaining ± 25 per cent of the time should be devoted to practical seamanship such as boatwork, handling of vessels, derrick-work, anchor work, etc., and allied subjects, particularly chemistry, fire-fighting, Factory Act and life-saving gear as they affect ships and/or cargoes. I would urge that all practical training be done on full-scale units, not on models. This practical work would teach the cadets what they often miss at sea.

In those courses which do not accept a boy until he is 16 years of age it is suggested that his training should be combined with a comprehensive and compulsory correspondence course and the two parts treated as one indivisible training scheme; the correspondence course to be conducted, for preference, by the School at which he received his pre-sea training.

Sandwich Course for Apprentices, both Direct Entry and Pre-Sea Trained

Apprentices who have shown their quality by obtaining good reports from their captains and officers and good results in their correspondence course or Merchant Navy Training Board examinations would be selected for an Intermediate Course. It would be made very plain to them that selection for such a course would be an honour and a great help if they wished to remain as officers in the company's service. It is suggested that after eighteen months' foreign-going sea service an industrious and intelligent boy would have learnt much of the work of a deck hand. He would then be selected for a Sandwich Course and sent to an Intermediate Department at one of the training establishments. This Intermediate Department would be entirely separate from Junior and Senior Departments and should be residential. The length of the course would be two terms, each of $13\frac{1}{2}$ weeks. The students would live in single rooms (no luxury) and be treated much more like university undergraduates than cadets in a pre-sea training establishment.

The syllabus of instruction would follow on the work that they had done at their pre-sea school and/or in their correspondence course. Great emphasis would again be laid on character training and the introduction of liberal studies.

Scheme for Older Boys with G.C.E.s at 'A' Level

Such a plan is envisaged in paragraph (6) of the outline plan of the Merchant Navy Training Board. We know that there are a number of boys who want to go to sea, whose parents and headmasters decide that they should try to obtain General Certificates of Education at 'A' level before deciding on a career. It affords many advantages, in that not only will the boy have a better education but he will have a wider choice of careers, both in industry and the Services, and his final decision is likely to be more certain because it is more adult. Some boys of this type want to go to sea but are told that they are too old, and in spite of their superior education they would still have to do four years at sea if they went without pre-sea training. Moreover, unlike the Services or industry, they obtain no financial help. I believe that the Merchant Navy could well do with some boys of this type

in addition to those entering under the present system. We have had a number of such boys at Southampton and they have all done very well at sea.

Suggested Procedure

As stated in the outline plan, special arrangements would have to be made for such entrants, and they could not be mixed either with pre-sea cadets or with young men returning for a sandwich course. The outline of these arrangements could be as follows.

A boy should leave school with two passes in the 'A' level of the General Certificate of Education, when his age would be about 18.

Age on leaving school, say	...	...	...	...	...	18 years
Two terms at a residential training establishment, to count as						
6 months' foreign-going sea service	...	...	...	...	...	6 months
Twelve months at sea in foreign-going service	...	...	...	...	...	1 year

(N.B.—A deck rating of 18, after 12 months' service at sea, may take the qualifying examination for the certificate of competency as A.B. If he passes, he may be issued with an Efficient Deckhand Certificate, which enables him to serve at sea in a capacity similar to an A.B.—Notices M.636 and 117.)

After completing this twelve months at sea, an apprentice would come ashore for a one-term sandwich course, which could count as three months' foreign-going sea service. Those young men who successfully complete this sandwich course would then return to their shipping companies, but would be treated as junior officers for the remaining period of their apprenticeships, in a similar way to the young men who have taken the two-term sandwich course. This means that at the age of 21 years they would be ready to take the Second Mate's examination, and it is suggested that young men of this educational standard should not take more than six weeks to prepare for and take the examination, which means that they would hold a Second Mate's Certificate soon after their twenty-first birthday.

I have spoken to a number of students studying for their Second Mate Certificate and they all agree that the amount of seamanship and practical knowledge they learn during their apprenticeship could be learned in far less than three to four years.

They would be stimulated if they realized that, if after a year-and-a-half they were able to pass a test (less than that of Second Mate), they would return to their companies to learn the work of an officer and their pay would be proportionately increased.

As a postscript may I say that I am sorry to see some local authorities refusing to grant aid to boys except to a school maintained or favoured by them. It savours of educational 'flag discrimination'. I am very pleased and very proud to note that Southampton and Hampshire, unlike the London County Council, will send a boy to any establishment if they think it is in his best interest.

In conclusion, I should like to say that there is a great ferment in the world of nautical training and education. Government departments, various organizations,

shipping companies, schools and others are producing and studying many kinds of projects and ideas.

There is much building, and a great deal of advanced equipment is being installed. I would mention Glasgow, Liverpool, Cardiff, Plymouth, Sir John Cass in London, Hull and South Shields as well as Southampton. The relationship between all concerned, especially at school level, has never been better. One has only to ask a colleague in another school for help and it is more than readily given. It is impossible to say to whom most of the credit should go, but it is undeniable that a large share must be given to Her Majesty's Inspectors, the Ministry of Education, the Ministry of Transport and the Association of Navigation Schools.

They are all doing their best to produce the best possible apprentices and officers for the British Merchant Navy.

DISCUSSION

THE CHAIRMAN: Captain Wakeford has kindly said that he will answer any questions and, in order to give you a little time to think about all the questions you are going to bombard him with, I would just like to echo the remarks made by the late Sir Philip Devitt, which were quoted by Captain Wakeford, in which he regretted the passing of the sailing ship. Although his remarks were made years after the majority of sailing ships left the seas, and sixteen years have gone by since then, I feel sure that the regret still remains amongst many old sailors like myself—I went to sea in a sailing ship in 1896, which is a long time ago! It is true, of course, that the seamanship, as we knew it in those days, is no longer required in a modern ship, as Captain Wakeford has pointed out, but still there is that tolerance that Sir Philip Devitt spoke about, and that self-reliance which was learned so healthily in the sailing ships in those days, and it is regrettable that sailing ships are no longer available for the training of cadets as with some other nations.

COMMANDER B. WEMYSS-GORMAN, R.D., R.N.R.(retd.) (Member of Apprentices Committee, Honourable Company of Master Mariners): The very question I was going to ask is connected with the last remark made by the Chairman, about sailing ships for training in the British Merchant Service. In my job I get around the Continent, especially Northern Europe—Scandinavia, Germany, and so on—and frequently I have been asked why it is that Britain, who has always been in the forefront of maritime affairs, has no sail training ships as such, other than small craft attached to the School, when Scandinavia, Germany, Italy, Portugal, and many other countries, who have nothing like the same world reputation and standing, still have sail training ships. I wonder if Captain Wakeford could give me an answer which I can repeat next time, because I never know what to say!

THE LECTURER: I suggest, Mr. Chairman, that that is why we might be in the forefront—because we do not have large sailing ships! There is a great difference between a sailing training ship and a sailing school ship. Many of the Continental countries have large sailing school ships, in which they carry many boys—in some cases running into hundreds. In such a vessel, when she is at sea, if a boy is slacking or not pulling his weight, he is unnoticed. If he is at a brace or a halyard, one does not notice if he is pulling or not!

The number of officers on board the mercantile sailing school ships—I am excluding those of the navies where they have an entirely different function—are comparatively few: perhaps only three or four officers. These people cannot easily divide their time between the safe conduct of the ship and supervising the boy, and the amount of training the boy gets can be comparatively small.

At Dartmouth in 1956, before our training vessel won the International Sail Training Race, I saw the cadets on board every sailing ship in Dartmouth Harbour. They were practically all mercantile sailing school ships, not sailing training ships, and most of the boys seemed to lack the crisp smartness and alert air that I expect from good officer material. In Continental countries they may have large square-rigged sailing school ships, but that does not save them from disasters at sea such as occurred with the *Andrea Dorea* and the *Stockholm*, so I do not think we have anything to be ashamed about in not having a large sailing ship.

There is such a difference there between a training ship and a school ship. Our British vessels, like the ones used at Southampton and Cardiff, want the smallest number of boys and the largest number of officers, so that a boy only has to wipe his nose the wrong way and an officer notices him!

The Captain Superintendent at Southampton, Captain H. Stewart, always says: 'What is the minimum number of boys required for this job?' If it is four, then he always has three!

CAPTAIN D. H. F. ARMSTRONG, D.S.C.: I should like to endorse what has been said as to the material that is going to sea over the last few years. The material is excellent. The training by the navigational schools, particularly Southampton, has been very good. But it is a matter of great disappointment that a lot of this very good material does not stay at sea.

I have had occasion, very often, to try to persuade extremely promising young officers to continue at sea, knowing that they start with great enthusiasm and, after a few years, something happens and they drop their life at sea and look for shore jobs. Really, it is a great waste of a very good start and I am sure it has exercised Captain Wakeford's mind. I should like to ask him if he has any suggestions as to how that can be stopped or improved.

My constructive criticism is that it is a matter of prestige amongst young officers. Now that the Navy is a little bit smaller, I think that prestige can be passed on to the Merchant Service officer, particularly as we have a good type going in now, and I think, to a smaller extent, there is the question of leave when they come to a marrying age. I wonder if Captain Wakeford can make a few remarks about that?

THE LECTURER: There are two things. The first one is biology, over which I have no influence! Young men marry and that is that.

The other thing is this—but firstly, may I ask you a question? What is the most desirable thing in life? I suggest that the answer is happiness. I think all would agree with that. How can happiness be achieved? People achieve it in different ways, but practically all will be happy if their time is occupied fully and with interest. One cannot have 100 per cent interest in any job—all of us have a share of dull daily jobs to do. Ideas are exciting. The transmuting of ideas into action is laborious. But if the young man at sea has interests in his profession, as well as out of his profession, he is likely to be happy and, in fact, so happy that even the wish to be with his wife will not necessarily bring him ashore.

I can give you an example. I was in the New Zealand Shipping Company—and I am silly about the New Zealand Shipping Company and never stop praising them—they were the happiest days of my life at sea, and I was so happy there I was almost sorry to come ashore! One of the reasons that I was so happy was not only that we were treated well—in the depths of the Depression we were treated extraordinarily well—but life was full of interest. For instance, we were carrying the first meat under gas, and the officers were able to experiment, to try to produce ideas, to produce memoranda for the Company saying it was better to carry it this way and on that kind of hook. The Company responded by paying attention to our ideas, many of which were probably silly, but they encouraged us to take an active interest in our profession. Leave and good accommodation are very helpful, but it is very truly said

that 'man does not live by bread alone', and I think that what officers and all men require is something to prevent them being bored, something that will make them vitally interested in life and in their profession. I think, Sir, that is the best answer I can give.

Training Establishments can try to help by providing, as I have said in Stage 1, the kind of training that will enable a young man to work and be happy on his own and to find his own amusement and intellectual pursuits.

SIR WILLIAM CURRIE, G.B.E.: May I say, on behalf of the Shipping Industry, how proud we are that the Thomas Gray Memorial Lecture this afternoon should be given by Captain Wakeford? It is a great honour to the Shipping Industry. Captain Wakeford has given us a most interesting address, and much food for thought.

There is one question that I should like to ask. Captain Wakeford at the beginning talked about character-building (which to my mind is 90 per cent of life) at the Southampton School: do your boys generally have G.C.E. qualifications when they come to the School?

THE LECTURER: This is one of the proudest moments of this lecture! To hear Sir William Currie express such sentiments is very gratifying to my colleagues, to my wife and myself, because there is no greater man in the Shipping Industry than Sir William and no man who is better loved by everyone who worked in the great organization of which he was Chairman.

The answer to Sir William's question is 'Yes'. As far as Southampton is concerned, the position is roughly as follows: we get about 1,100 or 1,200 registered inquiries every year—a registered inquiry is from some one who is seriously interested in coming. About 300 are selected as approved applicants whom we think worth bringing down to Southampton, where they stay for three days, living with the cadets. These candidates come three or four at a time and they live with the cadets, eat, sleep and wash with them, and during that time they have an entrance examination and three interviews. If they still wish to come, and if the cadets cannot persuade them otherwise, and we think they are all right, they are in. We accept 130 a year of those.

We like G.C.E.s. In 1959 the number of G.C.E.s held by all the cadets in the School who could get them—i.e., excluding nine boys from the Dominions and foreign countries—averaged 4.9, or nearly five G.C.E.s per head at 'O' level. That includes boys with nine, or even ten, and a few with one or two G.C.E.s at 'A' level: also four boys with none at all. Lack of G.C.E.s will not keep a boy out. Possession of them will not get him in. Some time ago I rejected a candidate who had, I think, nine at Ordinary Level and three at Advanced Level. I received a bitter letter which said the boy was going to another university to read for a degree, and expressing anger at his rejection. It was probably better for him, because he would never have made a good ship's officer. He was spiteful, he was disloyal, he was malicious, he was untrustworthy: he would not have made a good ship's officer if he had forty 'A' level certificates!

MR. W. L. S. HARRISON (General Secretary, Mercantile Marine Service Association): I have listened with enormous interest to what Captain Wakeford has had to say. It always is most interesting to have different parts of the profession put under the microscope, but I think that under Captain Wakeford's microscope examination of it we have, perhaps, overlooked one or two aspects I should like to have seen brought in, and particularly the training which actually can be done at sea. I am thinking here of cadet ships, among other things. Although there are many questions I should like to ask, I will confine myself to a purely practical one: this is on the policy of introducing sandwich courses and weakening the link between pre-sea training ships and the potential ship's officer as he goes forward to take his final certificate.

There is a very great diversity in the training methods of the different establishments which contribute to the making of officers, and it may be pure coincidence

that it is only in Southampton that we find an establishment capable, perhaps, of absorbing and developing all these sandwich courses. But from the purely practical point of view, could Captain Wakeford, with his knowledge of the British training establishments as they are now, say in what way he would superimpose sandwich courses, and what would be his minimum requirements in the way of building new residential establishments to absorb the number of potential officers he wants to see trained?

THE LECTURER: I am not advocating that the Shipping Industry should be asked to expend a large sum of money. Nothing was further from my mind. But most of us have read the Crowther Report, and all of us realize that it refers specifically to boys of the 18, 19 and minus-20 age group. All of us have read, seventeen years ago, the outline plan which referred to boys of 18. Many of us will have read the speech made by Sir David Eccles in the House of Commons yesterday on the vast improvements that the Government were determined to effect in, technical and further education. There were discussions on 'the right of day release', and the possibility of a major change to something like the French system.

The Ministry of Education have quietly, as is their wont, carried out a tremendous investigation into technical training, so it looks as if it is the policy of the Government, in other words the policy of the people of England, to see that young men of 18 should have some full-time education and training. This will apply to the Shipping Industry as it will to any other industry, and no doubt the Government will make provision financially, and take into consideration the special difficulties of the Shipping Industry as it will those of other industries.

Now as to the practical point of these sandwich courses: there is no idea in my mind that they should be restricted to Southampton. I cannot say that too strongly. It would be death to Southampton! We want to be the best training establishment, but do not want to be the biggest! Mere empire-building and numbers have always brought disaster to practically every organization, but the *Conway* (which Mr. Harrison in some ways can be said to represent), Pangbourne (I see my friend Captain Lewis in the audience), H.M.S. *Worcester* (of which Sir William Currie guided the destinies for so many years) and Cardiff: all those establishments could quite easily run an intermediate course. All that is needed is accommodation, built in accordance with the Ministry of Education Building Bulletins No. 15 and No. 5 referring to training colleges and new colleges of further education. These Bulletins, of which no doubt Mr. Harrison is well aware, give details of the buildings, the residential accommodation and the class-rooms for bringing back blocks of these young officers for an intermediate course. I would feel that, generally speaking, no establishment should have more than 50 or 60 of them if that can be avoided. It might go higher, but I suggest small numbers to start with, and I would say on first thoughts that it is desirable that these intermediate courses should be associated with pre-sea training establishments, because then the pre-sea training establishments can see the mistakes they have made coming back to roost and try to do something about them. Also a number of the staff and a good many of the practical facilities are available to both. It is economical to use the same boats, the same lecture theatre, the same cinema for both cadets and intermediate students.

I am not suggesting that they should be attached to establishments which only have senior departments, because I do not think they work in well with senior departments. They would work in well with junior departments provided they were kept completely separate and allowed to see one another but not to mix.

Mr. Harrison will realize that my omitting reference to other training establishments and cadet ships was entirely due to lack of time. Given time, he would have had the lot!

THE CHAIRMAN: I am sure you will all agree that we have had a most interesting

lecture from Captain Wakeford, and some excellent questions have been put to him. He has put forward three very definite constructive proposals: a change in pre-sea training, the introduction of the sandwich courses and the introduction of a scheme of training for older boys.

Although I have the honour of being in the Chair this afternoon, I can claim no authority on training for the Merchant Navy, but I am sure you will all agree that Captain Wakeford has given all those interested in, or concerned with, training, and the shipping industry generally a great deal of food for thought, and I very much hope that all his proposals will be given the consideration which I am sure they deserve.

I should like, on behalf of us all, to express our very grateful thanks to Captain Wakeford for his excellent lecture.

The vote of thanks to the Lecturer was carried with acclamation.

MR. OSWALD P. MILNE, F.R.I.B.A. (Chairman of Council of the Society): I am sure you will all agree with me that we cannot close this meeting without proposing a vote of thanks to our Chairman.

Last week, when I had the privilege of presenting a silver medal to Captain Ryder for 'a deed of outstanding professional merit performed at sea', I was asked afterwards by several people why it was that the Royal Society of Arts took an interest in matters of the sea. Well, it is a long story, and I will not go into it all, but in our capacity of promoting trade and commerce, we have, over the years, taken an interest in ships and shipping, apparatus for life-saving, and so on. It was, I think, in 1878 that we offered a prize for ideas as to the best way of saving life when vessels had to be abandoned at sea.

You have heard something of Thomas Gray this afternoon. In 1925 his son, Thomas Lowe Gray, was a member of the Council of the Royal Society of Arts and he really consolidated our interest in these matters to do with the sea by endowing us with the Thomas Gray Memorial Trust Fund, for use for the benefit of the Mercantile Marine. That thrust upon this Society a duty, and it is the way with the Society when it has a task of that sort to ask people with special experience of the particular subject to advise us how to act. We went, among others, to Captain Garbett, who had just retired from being Director of Aeronautical Services to the Navy, and he gave us every possible help. He also served on the Council of the Society and, since 1948, he has been Chairman of the Thomas Gray Memorial Trust Committee. We in this Society owe him a great debt for all the services he has done. We owe him, too, a debt for presiding this afternoon.

The vote of thanks to the Chairman was passed with acclamation, and the meeting then ended.

THE BRITISH CONTRIBUTION TO EDUCATION IN AFRICA

A paper by

L. J. LEWIS, B.Sc.,

*Professor of Education in Tropical Areas, Institute of
Education, University of London, read to the
Commonwealth Section of the Society on Tuesday,
8th November, 1960, with Sir Christopher Cox,
K.C.M.G., Educational Adviser to the Secretary of
State for the Colonies, in the Chair*

THE CHAIRMAN: The first duty of a chairman is not to interpose himself between the reader of the paper and the audience, but his second duty is to make sure that the audience does know just who the speaker is. So, although I cannot believe that it is really necessary, let me say that in inviting Professor John Lewis to address this Commonwealth Section this afternoon on 'The British Contribution to Education in Africa' the Section has made a peculiarly, pre-eminently suitable choice—both because of Professor Lewis's personality and background, and because of the post which he at present holds.

Ever since the British Government manifested consciousness of its educational duties in Africa in the early and middle 20s, what is now the Institute of Education of the University of London has held a key position as the main centre in this country of knowledge, counsel and training in this field, and as a clearing-house of information that has made itself known throughout the world. These activities of the Institute have been centred in the Department of which Professor Lewis is now the Head, and of which I am glad to see the first holder of the Chair, Dr. Margaret Read, sitting in the audience.

Professor Lewis himself has brought to his Chair not only the advantage of having had in the 40s several years on the staff of the Department, but wide and deep experience of education in Africa. He served for ten years as an educational missionary with the C.M.S. in Nigeria, as a trainer of teachers, as Headmaster of a famous grammar school in Lagos and as Mission Educational Secretary. Later he served ten years more as Professor of Education and Director of the Institute of Education in the University College of Ghana.

He has travelled widely and often in other parts of Africa, including the countries formerly administered by the French and by the Belgians, and he has close associations with those organizations and individuals in America who have manifested the keenest interest and activity in African education. You will agree with me, therefore, that the Section could not have made a more suitable choice.

The following paper was then read.

THE PAPER

Why should an attempt be made, at the present time, to review the British contribution to education in Africa? What is the nature of that contribution?

What lessons are there to be learnt from reflection on that contribution? These are the questions that I am going to attempt to answer.

To many people an examination of what is past and done with is a sterile academic exercise, or at best is but the maundering privilege of old age. And to many people Britain is perhaps in her old age. Certainly, direct British responsibility in Africa will shortly be a thing of the past. At the present time too, indirect assistance is being rejected by Africans who, impatient to be done with all signs and symbols of imperial tutelage, are looking in other directions for inspiration and help. Friends and enemies alike are rushing in at breakneck speed, sure of their ability to do better. On the face of it then, there is sufficient argument for regarding the British contribution as being finished and done with. It is true that direct responsibility is being given up. But we cannot irresponsibly withdraw support from a situation of which we have unique knowledge and experience. We, therefore, have a continuing indirect responsibility, all the more onerous and difficult to discharge, because assistance and co-operation will have to be given in circumstances sometimes tinged with suspicion and impatience. In these circumstances a review of the work done in the past is timely. But even more important than this is the fact that, whilst education is essentially concerned with the immediate present and the future, it is rooted in the past. The significance of this emerges in the writings of many educationists, three of whom I wish to quote as being particularly apt to our theme.

Firstly, an American contemporary, Robert Ulich of Harvard University.

We are fumbling around in education because we know so little about the future and do not bother to know enough about the past. Education is not only one of the greatest human enterprises in immediate planning, with parents, teachers, 'educators', school administrators, and college presidents as its leaders. It is also a long-enduring process of cultural self-evolution. This process expresses itself through the minds of men who are interested in, and capable of, looking deeper into the nature, the needs, and the aspirations of human beings than are most people.

As long as the daily planning, doing and structuring in education are constantly nourished by the wellspring of the total cultural evolution, education and civilization are in a state of health; when contact is cut they are sick and a crisis occurs.

We live now in such a crisis. The degree of futile busy-ness constantly increases in proportion to the loss of a feeling for cultural depth and continuity.

In Africa at the present moment, under the exciting stimulus of political change and because the facilities for education are rapidly being expanded, there is little sense of 'futile busy-ness'. Many educators in Europe and America are confused in their values and are not sure where the emphasis should lie to-day. In this country the debate about the Crowther report is evidence of the bewilderment. In the United States of America the discussion about the merits of liberal and special education is evidence of the confusion that exists. Whatever bewilderment there may be about educational purposes in Britain or America, in Africa the dominating consideration is for expansion. But the very busy-ness about speeding up the expansion of the provision for education may blind people to the real crisis.

This crisis is one which Africa shares with the rest of the world, and is the same kind of crisis as concerned Comenius and his generation in seventeenth-century Europe. Professor Campagnac described the situation and the attitude of Comenius in words that deserve to be kept in mind.

Comenius was a good, simple, man. He lived in a troubled world: there were wars and rumours of wars, old rules of conduct and forms of belief were threatened or broken; men were at once uplifted and bewildered by new knowledge which they did not know how to relate to what their fathers had known and frightened by new dangers, against which they seem to have inherited no safeguards nor could invent any. Instead of strife he wanted peace; instead of confusion, order; he wanted to test new things by truth tried and proven; old beliefs he wanted to enlarge and reinterpret by using new discoveries; with growth, to control and direct it, he wanted a principle of unity. He wanted to make an intelligible whole of life and the world. He wanted a way of life.

That is what all men want, whether their lot is cast in pleasant or rough places.

Nearly three hundred years ago, Comenius strove to find satisfactory educational answers to problems fundamentally the same as those we have been tackling in Africa, a task yet to be completed. This is more than sufficient reason for looking back.

Thirdly, may I draw your attention to some words of Dr. Margaret Read, the distinguished first occupant of the Chair of Education with special reference to education in tropical areas, in the University of London.

In colonial education we are dealing with a historical process which began on a certain date, and has certain defined and recognizable stages which follow one another chronologically. It is surely of the first importance that there should be a history of education, conceived and carried out in the best objective traditions of historical research and presentation, for each colonial territory, to be used by those who are planning education and the teachers who are carrying it out. In this historical survey the initial impetus and motives for introducing 'Western' education, as well as the agencies by which it was introduced, need making clear. The successive systems of education from the initial start up to the present time should be traced, whether under voluntary agencies or the State, or a combination of both. The process of welding together diverse systems into an administrative whole can be studied in educational codes and ordinances, including as it does establishment of financial provision on an increasing scale. It should be possible, too, through an examination of reports, speeches and legislative debates, to get some idea, even though an incomplete one, of the ideology held at different stages in educational development by those who were responsible for its planning and practice. . . . The present crisis is in itself sufficient reason for a historical study of educational achievement in the past. . . . If we can achieve these histories of educational development . . . we shall at least have a firm basis of facts. The need for this equipment, of an objective and indisputable character, is the more important when we come to look at other general considerations, which have been grouped under the . . . headings, political, ideological and cultural.

In brief, what does all this add up to? Education without reference to the well-springs of cultural evolution is an unhealthy institution. The radical changes now

taking place in Africa call for extraordinary foresight. Foresight is impossible without hindsight. Hindsight for education in Africa calls for careful study of the work of British educationists.

We might for a moment consider who were these people who have made the British contribution to education in Africa. They are a great variety of men and women; missionaries, government officials, merchant traders, and private persons from all parts of the United Kingdom. And what perhaps is not so fully appreciated, many Africans who, having accepted the British way of life and thought have striven to pass it on to their fellow Africans. The first of these devoted and remarkable African educators to whom I wish to refer is Philip Quaque of the Gold Coast. Sent to England by Thomas Thompson, the first English missionary to Africa in modern times, Philip Quaque for fifty years after his return to Africa taught his own people, and the school he founded has continued in existence until this day. Then there was Edward Blyden, of Liberian origin, who worked and agitated for education in Sierra Leone. His conduct at times must have been irritating to his mentors, and at times possibly smelled of sedition. A third African specially deserving mention is Henry Carr of Nigeria, whose appreciation and understanding of the British tradition, and whose consistent service to education in Nigeria has yet to receive from his own people the credit it deserves. Incidentally, it may be worth recording that in the dark days of the last war when it appeared that Germany might over-run North Africa, Henry Carr was less concerned with the immediate outcome of events than he was with the possibility that for a second time in the century, Britain might sacrifice the flower of her youth. A sacrifice which he thought would be a tragic loss to Africa and the World.

Then there is that group of African men and women, who, on their own initiative and with their own resources, established schools when neither missionary nor government help was forthcoming. Such efforts derived their inspiration from the British tradition. They are as much part of the British contribution to education in Africa as are the contributions of such distinguished governors as Sir Gordon Guggisberg and Lord Lugard, and of such missionaries and educationists as Frazer of Achimota and Laws of Livingstonia.

It would be fascinating to tell the story of the work of the individual men and women, but it would inevitably result in neglect of another group of contributors, those men and women who, in the tradition of the British Civil Service, have made their contribution anonymously. It is a tradition that has obvious political merit and in the widest sense is being accepted by the Africans who have taken over from the British Civil Servants. But it is a tradition that has its defects, not least that whilst the errors and mistakes are not excused or covered by the cloak of anonymity, successful and distinctive contributions too frequently do not receive due acknowledgement.

The work done by all these people, missionaries, government officials and private individuals, is to be seen in schools and colleges that now exist all over Africa. But of much greater importance is the work they did in establishing a policy and creating systems of education in the different territories, through which the policy could be implemented.

To turn first to the systems of education. The initial efforts were made by private persons with two quite separate purposes in mind. The first was evangelistic. Missionaries wanted to present the word of God to the people as the key to salvation, and so taught them to read the Bible. The second purpose, to train local workers, derived from the needs of traders, missionaries and government officials. The major need was for men able to read and write and to keep accounts. These purposes emphasized the importance of intellectual skills as evinced by book learning. Many contemporary critics of the education have condemned the early attempts at providing schooling as being too bookish, and unrelated to the needs of the people. Bookishness there was and still is, but there was and still is much relevance in the bookishness. And, it needs also to be remembered, that from the start attention was given to teaching practical skills. Crafts and agriculture have featured continually in the education programmes. Frequently, the efforts in these directions failed, and failure was due to causes that were not easily recognized or particularly susceptible to diagnosis and treatment. Those who are critical of these past efforts might with advantage turn to an examination of the causes of failure. The experience would be salutary.

The move from private endeavour to public responsibility was a slow one. This is a long story, involving issues of administrative responsibility that I do not propose to pursue here. But it is worth remembering that as early as 1882, when British responsibility in Africa was still tenuous, an Inspector of Schools for West Africa was appointed by the government. In 1911 an Imperial Educational Conference foreshadowed the interest in African education in Westminster that was to come to fruition twelve years later in 1923 with the establishment of the Advisory Committee for Education in Africa, a few years later to become the Advisory Committee on Education in the Colonies. The establishment of this committee was a major step forward and was the beginning of a new phase for education in Africa. For quite apart from the work it has done, it showed education to be the joint responsibility of government, voluntary agencies and the local people. It came into being as a result of consultation between the Imperial and the local colonial governments and the missionaries concerned with education.

The first major task undertaken by the Advisory Committee was that of defining the principles that should guide the making of educational policy. The memorandum in which the statement was made was published in 1925. It was based upon consultations between the interested parties already participating in education in Africa, and drew upon the best available experience in education in Britain. Furthermore, full use was made of an American offer of co-operation in the form of the Phelps-Stokes commissions on education in Africa. This was an act of enlightened statesmanship that proved of inestimable value in the preparatory study of the educational needs of Africa. This ready acceptance of American experience and generosity has been a consistent feature of British practice in Africa throughout the present century.

The statement of principles made in 1925 still deserves attention. It provides a yardstick by which to measure what has been done and, what is more important, still provides a basic guide to what is necessary.

In summary, the principles then laid down were:

1. While the Government reserved to itself the right to direct educational policy and to supervise all educational institutions by inspection or other means, voluntary effort was encouraged and it was suggested that Advisory Boards of Education should be established in each dependency to ensure the active co-operation of all concerned.

2. Education should be adapted to local conditions in such a manner as would enable it to conserve all sound elements in the local traditions and the social organizations, while also functioning as an instrument of progress and change.

3. Religious training and moral instruction should be regarded as fundamental to the development of a sound education and in the schools these subjects should be accorded complete equality with secular subjects.

4. The development of African dependencies on the material and economic side demanded a corresponding advance in expenditure on education and, in order to realize the ideals of education it would be necessary to attract the services of the best available men and women. To do this the status and conditions of service would have to be satisfactory.

The rest of the memorandum dealt more specifically with matters reflecting considerations of organization and administration.

5. Schools run by voluntary agencies which attained a satisfactory standard of efficiency should be regarded as of equal importance in the scheme of education with schools directly organized by the Government, and should be given grants-in-aid. The conditions under which grants-in-aid were given should not be dependent upon examination results.

6. The establishment of a sound system of education was dependent on a sufficient supply of trained teachers, and the teacher-training institutions should be guided by the principles of education laid down in the memorandum.

7. A cadre of visiting teachers should be established to ensure inspection and encouragement for the teachers in village schools.

8. Thorough supervision was indispensable, and inspectors should seek to make the educational aims clear and offer friendly advice and supervise their own schools in ways parallel to and co-ordinated with the Government system of inspection.

9. Technical and vocational training should be carried out with the help of the Government departments concerned and under their supervision. Belief in the dignity of manual work should be encouraged and efforts should be made to promote the equality of status with clerical service.

10. The education of women and girls should be treated as an integral part of the whole educational system.

11. Systems should be established which, although varying with local conditions, would provide elementary education of several types, technical and vocational education, institutions of higher education which might eventually develop into universities. This is an aspect of the subject to which I will return. Finally, the need for some form of adult education which would ensure identity of outlook between the newly educated generation and their parents is noted. These principles,

first enumerated in 1925, are, in my opinion, still valid, application of them being a matter of adjustment to changing circumstances.

In the years that followed a succession of documents was produced. Some of them were consequential upon the detailed consideration of particular aspects of education referred to in the 1925 memorandum. Other documents were produced dealing in detail with such matters as language and science teaching, and training in citizenship. In 1935, detailed attention was given to the need for relating the work of formal education to the circumstances of the local communities, the results being made available in a *Memorandum on Education of African Communities*. In 1944 it was the turn of adult education to receive special attention, the outcome, the *Memorandum on Mass Education in African Society*. As a result of this report, steps were taken to develop mass literary work, and to recruit the active co-operation of the mass of the people in dealing with such urgent social needs as better roads, water supplying health centres, food production. In other words, the report provided the impetus to what we now call community development.

In 1945 the reports of the Royal Commission on Higher Education in the Colonies spelt out the details of the programme for higher education. This resulted in the establishing of university institutions, and colleges of arts, science and technology, in East and West Africa as well as in Asia and the Caribbean. Although the establishment of institutions for higher education was included in the recommendations of the 1925 memorandum to which I have already referred, the scale of the development of university education that has taken place since 1945 was certainly not envisaged. Decisions recently made to expand the provision for higher education in East Africa, and the recommendations of the Ashby Commission for Nigeria, are but the latest demonstrations of the British concern for education in Africa.

Statements of policy and programmes, however, are one thing; what matters to most people are the practical outcomes. Looked at in terms of statistics, the picture is patchy and some aspects of the picture are extremely depressing. In every territory there is a shortage of adequately trained teachers, the education of women and girls continues to lag behind that of men and boys, the number of illiterates is still so high that effective communication between the governments and their peoples is frequently difficult if not impossible.

Estimating the school population to be one-fifth of the total population, we find that the number of children not in school is still very great. In the secondary schools there are not enough places for all who are capable of benefiting from the opportunity for secondary education. Of even more concern at the present time, such provision as exists is quite inadequate to meet the need for persons who have attained a satisfactory level of secondary education. The facilities for higher education also fall far short of what is desirable. (See the appendix on page 43.) Humbling to our self-esteem as these figures may be, in themselves they can be very misleading, for they do not reveal either the total dimension of the task involved or the economic difficulties inherent in the situation.

The amounts of money being spent may appear to be very meagre by comparison with expenditure on education in affluent industrial societies. But it is not from

lack of concern for education that this is so. In this respect it may be wise to remind ourselves that the first grants-in-aid for education in Africa were made by Parliament at Westminster in 1809 when money for education was included in the establishment vote for Sierra Leone, before Parliament had accepted any responsibility for spending money on education in Britain. That did not come about until 1833. Critics of the inadequacy of the spending of money on education in Africa in the past too frequently accept a valuation now placed upon education that is, in fact, of very recent origin.

It is frequently suggested that the British contribution to education in Africa has always been too little and too late. Measured in material terms this undoubtedly has an element of truth in it. But it is a judgement that savours much of wisdom after the event. This is even more true of the strictures made about much of the content of education. It is easy to poke fun at the rigid adherence to curricula and syllabuses used in English and, not infrequently, Scottish schools, and to deride the slavish acceptance of the English examination systems. Two things need to be kept in mind, however. In the first place, people had to start with what they knew and were limited by their own educational experience. It is much more difficult to adjust and adapt, and invent new material to meet new circumstances, than the observers on the side lines generally appreciate. The need for adjusting, modifying and inventing, both in terms of the content and methods of education, was recognized and indeed enunciated as a principle early on. Attempts were made at Malangali in East Africa and at Omu in West Africa to use local traditional ways of inculcating discipline and training character in schools, to mention but two imaginative attempts at relating the work of the schools to local conditions and needs. The fate of these and similar experiments serve to underline the difficulties of the policy of adaptation. Furthermore, if the use and development of African languages and literature have proved disappointing it is not from lack of thought or effort but is the consequence of the intractable nature of the work to be done. Review of British attempts at relating the content and methods of education to local needs suggests that their greatest value lies in the variety of solutions that have been attempted and in the persistence shown in pursuing this policy rather than in the degree of success attained in specific experiments. That it is the only policy to follow is unquestionable, but it will never be an easy one to work out in detail.

Success in relating the content of education to the local conditions, is of course, dependent upon knowledge of the local environment. This fact was recognized by the men and women who were responsible for founding the new university colleges in Africa. For them the problem was related to another of equal importance, that of ensuring general acceptance of the standard of learning of the new institutions. The solution to these inter-related problems was sought through the scheme of special relationship between the new university colleges in Africa and the University of London. Whilst the University of London had final responsibility for the assessment of standards, the local university teachers were given every encouragement to relate the content of their teaching to the local environment.

The syllabuses they produced have received some criticism. But careful examina-

tion of research that has been carried out and of the way in which the results have been incorporated in the teaching suggests that creditable efforts have been made to adapt the work to local conditions.

Furthermore, scrutiny of the current autumn lists of the university and commercial publishers suggests that we are reaching the point at which the studies of the last ten years in the new university colleges are influencing the content of the textbooks for use in the schools.

That this has happened so quickly reflects credit on all concerned with the work. And I wish to emphasize—all concerned. The original studies that have produced the new knowledge have, of course, been the work of the local university scholars. But they are indebted to the support they have received from the universities in the United Kingdom channelled through the Inter-University Council for Higher Education Overseas. Much less publicized, but of equal importance, is the support that has come from government officials in this country and in the African territories.

It may not be inappropriate at this point to utter a word of warning. The urge to expand the facilities for university education, political ambitions and to some extent political opportunism may lead governments to press for changes in the control and administration of the university colleges and in the kinds of courses being provided. Impatience with the present provisions may lead to hurried modifications and experiment. Modification and experiment will be necessary. But too rapid and too frequent indulgence in change is likely to result in harm rather than good.

It is exceedingly difficult to judge correctly when to embark upon a major change or step forward in education. There was a timeliness about the steps taken by Britain to provide for higher education in Africa that is specially significant. Having due regard to the social and economic conditions, I would hazard the judgement, that the war apart, an earlier major effort would have been premature, a later one could have been tragic.

If that judgement has any validity, then it is reasonable to ask a further question, 'Was there any feature of the British policy for education in Africa that may have contributed to this fortunate timeliness?' To that question, I would reply, Yes. And the feature of policy that I would draw to your attention, is the process of continuing review carried out at the local level and and at the more remote distance of Whitehall. The 'man on the spot' had the ultimate responsibility for decision, but his judgement was guided by the opinion of men and women of wide experience in Britain as well as by the more immediate reactions of the local people. Such a balance of counsel, systematically provided, has its own continuing value.

Outstanding among the contributions made by British educational effort is that of establishing a set of principles on which to build up education systems. Even more important has been the presentation of the concept of education as a social institution, fundamental to the healthy political, social and economic growth of the communities. This concept has been expressed in many ways. Guggisberg gave expression to it in words that have become a slogan: Education, the Keystone. More recently, the rôle of the British Government in respect of Africa was defined

by the *Memorandum on Mass Education in African Society* as the securing of

- (i) the improvement of the health and living conditions of the people;
- (ii) the improvement of their well-being in the economic sphere;
- (iii) the development of political institutions and political power until the day arrives when the people can become effectively self-governing.

And the part that education plays in achieving these aims was described in the following terms:

A man may be healthy though illiterate. He may still be prosperous without being learned. He may, while still almost entirely ignorant of the wider duties of a citizen, live and, indeed, enjoy life under a government which provides him with security and justice. All these things may, in a measure, be true, but it is far truer that the general health of the whole community, its general well-being and prosperity, can only be secured and maintained if the whole mass of the people has a real share in education and has some understanding of its meaning and its purpose. It is equally true that without such general share in education and such understanding, true democracy cannot function, and the rising hope of self-government will inevitably suffer frustration.

In those two statements, namely, the definition of the political objectives of British rule in Africa, and the description of the significance of education in the fulfilment of the objectives, we have a measure of the worth of the educational effort.

What then are the essential features of the British contribution to education in Africa?

I suggest that in essence British educationists have (1) provided a set of principles to serve as a guide in the building of an education system; (2) laid the foundations for such a system; and (3) offered a concept of education as a social force whereby it becomes the means of creating a socially, economically and politically healthy society.

Much remains to be done. This is a fact not to be hidden and ignored, but to be freely admitted. In making this admission, there should be incentive for further effort. The principles that have been formulated, however, will remain sound guides for those who will be responsible for education in Africa in the future.

And what of the lessons to be learnt by reflection upon the British contribution to education in Africa? The first lesson is the importance of recognizing that education is fundamental to the social, economic and political well-being of a community. Unfortunately, in considering the financial consequences, British policy was handicapped for many years by the fact that the education departments were regarded as spending departments and were not provided with the money necessary for them to make their full contribution to social and political development.

The second lesson is that the people as a whole must understand and accept the value of education and be willing to share fully in its provision. Consultation was recognized as an important principle in the formulating of policy for education. This principle was applied in respect of those professionally engaged in educational work. But little attempt was made to inform the general public or to engage lay

opinion in discussion of educational policy. In consequence, the people have not been as fully concerned with education as they ought to have been.

There is a third important lesson to be learnt from the history of British educational effort in Africa, an aspect that I have hitherto not touched upon, that is the danger of allowing considerations of political expediency to modify educational planning. Twice in the last half century, the accumulation of educational experience has been largely dissipated because political considerations overshadowed all others. In the 1920s the need to economize on government expenditure because of the slump resulted in wholesale axeing of education officers. Again, in recent years, the abrupt termination of the appointments of experienced education officers, as well as the appointments of other experienced colonial servants, following the granting of independence, has resulted in a loss of experienced manpower, the effects of which are likely to be felt for many years ahead. There are other examples of political decisions adversely affecting educational development that could be quoted. The lesson to be learnt is that what may appear to be minor setbacks to educational work almost invariably result in cumulative ill-effects.

There are many aspects of the British contribution to education in Africa that I have not attempted to examine. It must, however, be remembered that apart from the provision of education through schools and colleges in Africa, there has been a constant stream of Africans to schools and colleges and to industries in this country. The press, the B.B.C., the British Council, the Armed Forces, all have contributed directly or indirectly to African education. Their importance is not easy to assess, but to ignore their part would be to distort the picture.

Whatever assessment is made of the British contribution to education in Africa it cannot be gainsaid that there has been much solid achievement and that sound foundations have been laid. Undoubtedly, some features of the work have been unsatisfactory. But the best measure of its merit lies in the determination of Africans to extend the provision of education as rapidly as is possible. Remember, they are the products of the education system they have inherited.

What of the future?

The people of Africa will have to forego other things they want so that every available penny is invested in education. Even this will not be enough. Countries outside Africa will have to help with men and money. In what must for many years be an international exercise, Britain has a special contribution to make from its past experience in Africa as well as from its historical heritage. In this respect, it is to be regretted that the British Government has not seen the way clear to establishing a Commonwealth Education Service, able to ensure the giving of continuity that has marked the past work of Church and State in education in Africa.

APPENDIX

SCHOOL AND COLLEGE ENROLMENT IN SELECTED TERRITORIES

<i>Territory</i>	<i>Year</i>	<i>School Age Popula- tion</i>	<i>Primary School</i>	<i>Second- ary Grammar</i>	<i>Techni- cal and Voca- tional</i>	<i>Univer- sity</i>	<i>Public Expendi- ture per head of Popu- lation</i>
Gambia	1958	58,000	6,465	674	47		£ 0.47
Sierra Leone ...	1958	428,000	69,276	5,904	333	330	0.77
Ghana	1958	967,200	540,921	83,096	4,979	609	1.5
Nigeria							
Lagos	1957	67,400	56,688	4,591	1,578	1,112	0.24
Northern Region	1957	3,608,600	205,769	3,651	872		
Western Region	1957	1,347,200	982,755	46,810	220		
Eastern Region	1957	1,585,400	1,209,167	12,242	3,100		
Nyasaland	1958	520,000	269,693	1,169	927		0.34
Kenya	1958	1,198,000	601,410	3,922	1,114	880	0.9
Uganda	1957	1,153,000	418,179	21,599	3,807		0.88
Tanganyika	1958	1,733,000	403,301	3,499	1,360		0.57

NOTE: The school age population is estimated as 20 per cent of the total population.

DISCUSSION

THE CHAIRMAN: The topic is now open to discussion.

Perhaps I might just make one contribution myself while people are thinking of points they want to raise: I am most interested in the whole paper and the historical evaluation that Professor Lewis has given us. I was particularly interested when, right at the end, he took a look at the future, because one finds oneself asking: supposing in twenty years' time a similar paper is given in this Section on the British Contribution to Education in Africa, what will be said about the contribution between 1960 and 1980? It will partly be the inevitable consequences of the heritage which Professor Lewis has examined, but what new elements will come in in the next twenty years?

The answer to that, I suppose, depends partly on whether those suspicions of indirect responsibility and help to which Professor Lewis referred at the beginning of his paper prevent Africa from wanting further help from Britain and partly, assuming that they do not prevent Africa from wanting further help, on the extent to which we can rise to the challenge. The evidence so far is all that there will be the need and the demand for further help, and help partly similar to what we have given but in some ways drastically different. The time for counsel and advice is dead and buried over most of Africa, except when given in the course of intimate collegueship on the spot. It has been replaced, I think you would agree, by a need for continuing contact and practical services and help of all kinds; above all by two-way exchange, of teachers and visitors from those who are leaders in education

—or future leaders—coming to this country, and the service of teachers on short-term contracts from here overseas, replacing to some extent that sharp, sudden and regrettable, but I think historically inevitable, gap to which Professor Lewis referred towards the end of his paper, caused by the withdrawal of many educationists just as countries attain their independence.

I think the evidence is all that Africa is going to want this continued help. After all, although contacts with the public in Africa have never been the strongest point in our contribution, as Professor Lewis implied, Africans have themselves known what they wanted from our education and they have taken it. Someone wrote many years ago: 'In the long run, Africa will take what it needs from British education, will digest it slowly and will assimilate what it does not spit out.' Africa has made so much of our education her own that it is very unlikely, and it would be an act of self-diremption, if they cut sharply away from what has become so much of their own growth. Whether we shall rise to that challenge I do not know: I can only say as a word of optimism that I spent the whole of this afternoon at the first meeting of the Standing Committee for the National Council newly established for the Supply of Teachers Overseas. It is significant, as a comment on 1960, that this should be the year in which this country for the first time brings into being the National Council for the Supply of Teachers Overseas.

MRS. FELICITY BOLTON: Mr. Chairman, I should like to ask Professor Lewis, with reference to his last remark about his sorrow that the British Government did not see fit to institute a Commonwealth Education Service, does he not think that possibly the Government had some wisdom, in that newly independent countries rather like to have a look around and see which organizations, institutions and bodies are most likely to help them, behind the scenes, rather than to be directed through a Commonwealth Service at this particular moment? I used to share his view, but I have a strong impression now that our new Commonwealth members possibly find it more convenient to go through the many and various channels to find out which is the best one, and to make their own individual choices. Later on there may be a coalescence of the possibly too numerous organizations into some more coherent Commonwealth Education Service, and I am certain that we should not neglect any chance of advocating such a service as a long-term aim.

THE LECTURER: The first thing I would say, is that whatever political propriety or expediency there is in allowing the peoples of the former dependent territories to seek help and assistance wherever they wish, there is an educational factor, namely continuity, that has been lost by the failure to develop a Commonwealth Education Service. It is true that these people wish to stand on their own feet and to seek their own counsel, and rightly so. But it is also true that education is a continuing process. If we had had the wisdom and the will to ensure the continuity of service of some very remarkable men and women, their continued presence would have been welcomed, and we should have found it easier to deal with some of the educational problems that now beset us in Africa. We will get people to go to Africa on short contract terms, and they will do good work. But, speaking for myself, there is all the difference in the world between the contribution made by the person who gives a whole lifetime to a job and that made by one who does a good temporary job.

We could have dealt with this problem of providing continuity of experienced aid without interfering with our African friends' choice of the way they wish to go. The provision of a Commonwealth Education Service could still make a great difference to educational development in Africa.

MRS. E. MARY COWDERY: Professor Lewis, do you consider that the education will really continue and improve with their independence so close at hand? I find it is so difficult out in Kenya, where the men refuse to let their women attend the schools in any numbers yet.

THE LECTURER: Here I hesitate as a mere man to say what will happen. My regard for the African woman and her capacity for getting things done and controlling things makes me feel happier in some respects where they are becoming independent than where they still remain under our tutelage.

On the whole I think the answer is this: the men slowly are coming to a genuine realization that their women must be educated. The rearguard action by men who think that the proper place for a woman is in the kitchen, on the arm decoratively and in the bed will be a vigorous one in many of these places, but the men who are accepting political and administrative responsibility are finding the need for educated women in a way that I do not think they would ever have found it so long as someone else exercised responsibility for their affairs.

Secondly, I would say—and here I am speaking from limited direct working experience with African women—that they themselves are beginning to exercise such a potent influence in public affairs that the men will *have* to do much more about education for the women.

MISS JANE DREW, F.R.I.B.A.: There is one aspect which the Lecturer has not touched on, which I naturally think very important: that is, the physical contribution we have made to education.

I remember when we first worked for the Education Department in Ghana how wonderful it was when Thomas Barton, who was then alive, said that he considered that the buildings themselves were one of the primary agents of education. So long as Thomas Barton was there—I am not saying there are no others—that principle was laid down and maintained.

I am only familiar with the West African aspects—in particular Nigeria and Ghana—but I think that is a very considerable part of the background which should have some recognition in reviewing the British contribution to education in Africa.

THE LECTURER: I agree, latterly we have made a valuable contribution to the aesthetic education of Africa by our attention to the quality of the school and college buildings and sites.

SIR ARTHUR KIRBY, K.B.E., C.M.G. (Commissioner for East Africa): I should like to ask Professor Lewis whether he sees any danger in the possibility of standards other than the British infiltrating into the educational system in Africa. I ask this for two reasons: I have not read the Ashby Report myself, but I heard a very eminent Nigerian the other day deploring the fact that many of the recommendations made might be bringing American standards to Nigeria, rather than British.

The second reason is that Britain to-day, as I see it, seems to be accepting as a fact that Britain can no longer give either sufficient financial assistance or technical aid to the under-developed countries, and is willing to throw this burden over—to a very great degree—to other people. If that is the case, then the standards of the other assisting countries will be brought to bear upon Africa.

THE LECTURER: First of all, I ought to inform the audience that I am pro-American in this field. I have been for the whole of my career, so I may be regarded as a prejudiced witness.

This question of standards—British, American and any other country's standards—is one about which one cannot make any broad generalization. I have twice in the last fifteen months been in the United States, and I have been visiting institutions and meeting educationists, and their best standards make much of our work look pretty shoddy. On the other hand, their poorest standards are something which I would hate to think they would dare to export to any part of the world.

I myself am not afraid of this problem. A few weeks ago I had a senior Nigerian civil servant in my room. He had been visiting Germany to consider the possibilities of using German resources for advanced training to technical and professional education, and when he came back he spent a day with me to talk things over. One

of the things that he said to me was this: 'It's all right for these people to offer this, that and the other in the way of assistance, but it's got to be related to what we have.' I think this is the attitude of mind that will come into play. If, as a result of international participation in the development of education in Africa, standards are brought in which the Africans will question, then the attempts to give them those standards to work by will fail.

One of the things that has impressed me in the last few years in my working contacts with Africans who have taken over from us, is how sure they are that we have given them a standard to work by. They may not be willing to go all the way with those standards, in some respects. For instance, I have very good African friends who quarrel with me over our approach to standards in university work: they say, 'Well, why can't we have something lower for the time being, because we've got to get large numbers of people trained?' But underlying this anxiety about the immediate needs and urgencies there is also a concern for standards. Much will depend upon the extent to which those who have received this concept of standards from us will be able to pass it on. Without mentioning names, there is one country where there has been a falling off in quality in some respects. Two years ago I found it necessary to say to the Educational Attaché of that country: 'I'm sorry, if this is the best kind of person you can send to us then it's a waste of your money and our time, because they're not going to be capable of benefiting by coming to us.' Instead of meeting resentment at this attitude, I was asked questions; they wanted the chapter and verse, and at the end of the discussion they said, 'Please, give us help to get this thing straight at our own end, because our people must have the training you provide.'

I have been in and out of East and West Africa several times over the last two years and I would say there is little to fear.

MR. E. D. ROBERTS, B.A.: Following on the answer Professor Lewis gave to the last question, I wonder if he could briefly comment on the competition the British contribution is facing now that our political ties with these countries have been weakened. I am thinking particularly of the students from West African territories who are going to study in countries like Eastern Germany, Czechoslovakia and the Soviet Union on what, to them, seem to be very good terms. I feel that this is a challenge that we have to face as British educationists in the next twenty years.

THE LECTURER: The short answer to that is that the apparently attractive terms on which some of these people are finding themselves in Eastern Germany and other countries behind the Iron Curtain are proving far less attractive in reality.

Secondly, there is a shrewdness about our African friends. They are not likely, being rid of one set of Imperial chains, to take on another. I do not think I need elaborate on that! There is a shrewdness in their assessment of what is possible and what they are going to give to the outsider by way of opportunity within their own countries.

I am not over-worried about this aspect of educational aid. It has its problems; it has its dangers; but on the whole, as one person said to me recently, why not let some go? They will be very much better propaganda for our way of life when they come back than if we try to stop them from going.

THE CHAIRMAN: It is past half-past six, and therefore, in moving a vote of thanks to Professor Lewis, I will say no more than that I am quite certain you have all enjoyed enormously the last most interesting hour, and Professor Lewis's wide-ranging, thoughtful and very wise paper, and his contributions in discussion. I only wish that we could have had a longer discussion. I hope you will show your gratitude to Professor Lewis in the usual way.

The vote of thanks to the Lecturer was carried with acclamation and, another having been accorded to the Chairman upon the proposal of Mr. Hugh A. Warren a Member of Council of the Society, the meeting then ended.

FOTHERGILL PRIZE ESSAYS*

RESCUE FROM CRASHED FIRED AIRCRAFT

By V. CABLE

When a crashed aircraft catches fire it frequently does so with injured or unconscious people on board, and the fire spreads so rapidly—even without the assistance of exploding fuel or munitions—that these people can have little hope of survival. Firemen must, in these circumstances, devote a major part of their attention to preventing the fire from spreading in what are often highly flammable surroundings, and most developments in equipment have tended to concentrate on this aspect of fire fighting.

Usually the saving of human life in a burning aircraft has been a matter of luck, i.e., dependent on the nearness and accessibility of the incident to a rescue squad. Frequently the delaying effects of heavy traffic have proved vital in built-up areas, whilst the absence of roads or tracks mitigates against an effective approach to accidents in rural or mountainous country.

Although in recent years enormous strides have been made in improving equipment and techniques, it must be admitted that this approach is merely a matter of modifying tactics and that no effective rethinking has been applied to the strategy of rescue work.

In a serious attempt to close the gap between new tactics and old strategy a Fire Service entered into a series of consultations with aerodynamicists and wind tunnel experts which culminated in the suggestion that a hovering helicopter over a burning aircraft might so flatten the flames as to make rescue comparatively easy. The following test was then carried out:

A twin seater jet aircraft, complete but for the undercarriage, was positioned at the west end of the airfield, with a dummy pilot in complete kit and harness strapped into the ejector seat and the canopy locked. A Hellicor Helicopter was positioned at the east end of the airfield while the crash appliances remained outside the fire station behind air traffic control and midway between the aircraft and Hellicor.

The aircraft was fuelled up with 100 gallons of Avtag, Light Oil and Thinners, and fired. One minute was allowed to elapse; then on the appearance of a red flare from the control tower two firemen ran from the Hellicor hangar, entered the machine with the pilot and landed 30 ft. upwind from the now blazing aircraft where the two men disembarked and ran to the crash, while the Hellicor itself took up a position 20 ft. above the aircraft with the tip of its rotor blades level with the edge of the fire. The down rush of air hitting the ground and travelling towards the aircraft flattened the flames and allowed the firemen to effect a comfortable rescue unaided by extinguishing media, breathing and body temperature conditions being improved by the copious amount of cooled air. The

* The authors of the two essays published here were each awarded a Fothergill Prize of £10. For details of the results of this year's Howard and Fothergill Prize Competitions, see p. 847 of the November *Journal*.

Helicopter proceeded to Luton and Dunstable Hospital where, after making a landing on the hospital lawn, nurses and doctors took charge of the patient and made preparation for an emergency operation.

The time schedule was as follows:

Time from red flare to touch down of Helicopter	...	...	45 seconds
Rescue of aircraft pilot	...	...	35 seconds
Pilot delivered to hospital— $4\frac{1}{2}$ miles	...	...	4 minutes

An emergency operation could have begun nine minutes from the time of the actual rescue.

The success of this experiment amply demonstrated the soundness of a revolutionary principle, and the sponsors believe that if sufficient prominence and attention is given to their findings the way is open for a new and fruitful field of research.

A SUGGESTED FIRE ALARM*

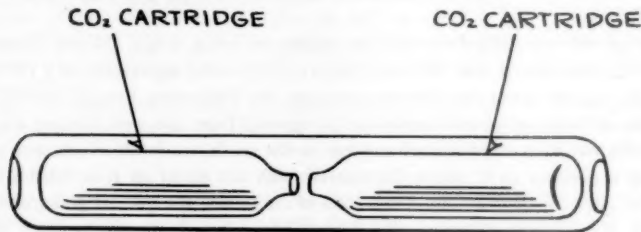
By JOHN A. CHAMBLISS

Four aspects of fire detection suggest the use of the rudimentary alarm illustrated by the drawing and model submitted with this essay:

- (1) Wood of a highly combustible character ignites at 440°F .; newsprint at 446°F . No solids ignite at less than 275°F .
- (2) The lowest flame temperature is 975°F .
- (3) Early detection is important.
- (4) All other self-contained alarms need periodic inspection and restoration.

The alarm described operates at 250°F .† It can be tested in a paper carton 18 in. square. To an upper corner fasten the alarm. Apply heat inside; canned heat will serve. Before the carton ignites the alarm will sound.

The use of the alarm is easily grasped by an untutored person. It can be purchased by those of small means, requires no skill to install; each added installation widens protection.



Drawing showing construction of the fire alarm device submitted by Mr. Chambliss

* The invention described in this essay is protected by Patent in the U.S.A.

† Figures stated are subject to a tolerance.

A noteworthy fire hazard arises out of the opening unawares of a door into an area which is already afire. Another hazard is the delayed detection of fire in attics. Electrical installation failures cause smouldering fires that often become formidable.

The alarm consists of two cylindrical cartridges enclosed in an aluminium tube. Each cylinder contains 9 grams of carbon dioxide. The cartridges are of steel coated with cadmium to resist corrosion. They are sealed thoroughly. The alarm will retain its efficacy during the life of any ordinary structure, and consequently it can be placed inside the walls of a building during construction and in other places which completion of the structure will make inaccessible. Being insensitive to seasonal temperatures normally reached in recesses of buildings in some climates, it can be installed without question. It needs no inspection or maintenance. It is durable even when handled violently. The cylinders rupture at 9000 psi. They do not fragment, but are dangerous under this high pressure. Confined in the aluminium tube, the violence is reduced markedly.

The cylinders operate almost invariably in succession. The sound is similar to the report of a pistol or rifle, a backfire or the slam of a door.

The concussion tendency and gas expansion upon operation are such that the warning sound can be augmented by placing the alarm at places where it will dislocate household fittings. A succession of sounds may be obtained by placing several alarm devices at various points in the same space so that they give the alarm as the space heat augments and spreads.



GENERAL NOTES

ART AND INDUSTRY



*Dora Gordine's panel for the
Esso refinery at Milford Haven*

An interesting example of how the Society can be of service to industry is provided by the commissioning of a bronze panel for the new oil refinery of the Esso Petroleum Company Ltd., at Milford Haven, opened recently by the Duke of Edinburgh.

The Company sought the advice of the Society in the choice of a suitable artist who could carry out a work of this kind, and Dora Gordine (the Honble. Mrs. Richard Hare), a Fellow of the Society, was eventually given the commission.

Her bronze figure of an oil worker, 7 ft. high, is an expressive symbol of power and a fitting decorative panel for the entrance hall of the administrative offices of the refinery. In order to have the panel ready for the opening ceremony, Miss Gordine was obliged to complete the work in less than three months—in itself a considerable achievement, having regard to the nature of the task and the technical processes involved.



*David Wynne's 'Teamwork' group for
the Taylor Woodrow office at Southall*

The Society is glad that it was able to render this service to one of its Companies in association, and hopes that other Companies will not hesitate to call on it for similar help and advice.

Another sculpture commissioned by a large Company is the group which has just been executed for the head office of Taylor Woodrow at Southall, Middlesex, by Mr. David Wynne, also a Fellow of the Society. Mr. Wynne's group, 32 ft. in length, represents the Taylor Woodrow *Teamwork* symbol of four men pulling on a rope. It is cast in aluminium and stands on a ledge 40 ft. above the ground. In 1958 Mr. Wynne carved a monolithic granite group expressing the same symbol for Taylor Woodrow's overseas office in Ealing. Fellows may remember that this earlier work was the subject of a film, introduced by Mr. Wynne, which was shown during a Film Evening at the Society's House in February of this year.

CANADA COUNCIL FELLOWSHIPS, 1961-2

The Canada Council for the Encouragement of the Arts, Humanities and Social Sciences is offering a number of Junior Non-Resident Fellowships for study in those fields, tenable in Canada during the academic year 1961-2. A 'non-resident' is defined as one who is not a Canadian national, is not an immigrant, and has his ordinary place of residence abroad.

The Fellowships, of an average value of \$2,000 (plus the cost of return transportation) are open to artists, scholars, musicians, writers and other practitioners and teachers of the arts who have shown exceptional promise in their work. All applicants must have a good knowledge of English or French, and those applying

for Fellowships in order to pursue academic studies must already have a university degree or equivalent standing. Candidates who wish to follow extra-curricular training are required to submit a definite programme of activities.

Application forms and further details are obtainable from Canada House, Trafalgar Square, London, S.W.1. The closing date for the receipt of applications is 15th January, 1961.

LEVERHULME RESEARCH AWARDS

The Leverhulme Trust is once more inviting applications from senior workers of established position for Fellowships and Grants in aid of research. These awards are limited to British-born subjects normally resident in the United Kingdom, though in exceptional circumstances the Trustees may waive the condition as to residence. No subject of inquiry is excluded from consideration, but preference is given to subjects in which provision for research is inadequate. The duration of the awards does not extend over more than two years or less than three months, and the amount granted depends on the nature of the research and the circumstances of the applicant.

Further details and application forms may be had from the Secretary, Leverhulme Research Awards, St. Bridget's House, Bridewell Place, London, E.C.4. The closing date is 31st December, 1960.

HISTORIC BOOKS ON MINING AND KINDRED SUBJECTS

An exhibition of rare books on mining, assaying and metallurgy, mining law and mineralogy, from the collection of Mr. Robert Annan, is on view at the Science Museum, South Kensington, until 31st December. This is the fourth in a series of exhibitions devoted to historic books which have played a notable part in the development of science and industry. It includes many rare German works, testifying to the early pre-eminence of the German miner and his methods, and also books published in other countries. Of particular interest from the bibliographical point of view is Gabriel Platte's *Discovery of Subterranean Treasure* (1639), the first work entirely concerned with mining to be printed in English.

There is no charge for admission to the exhibition, which is open daily from 10 a.m. to 6 p.m. (Sundays, 2.30 p.m. to 6 p.m.).

WILSON STEER EXHIBITION

An exhibition of the paintings of Philip Wilson Steer, commemorating the centenary of his birth, is on view at the Tate Gallery until 11th December. The exhibition, which has been arranged by the Arts Council, includes oil paintings and water-colours and provides an opportunity for reassessing the qualities of this artist, who died in 1942.

There is an admission charge of 2s. 6d. After its London showing the exhibition will visit other cities in Great Britain, namely Birmingham, Birkenhead, Swansea, Manchester, Sheffield and Glasgow.

STUDIES IN THE SOCIETY'S ARCHIVES XV

A CAMPAIGN TO PROMOTE THE PROSPERITY OF COLONIAL VIRGINIA (ii)*

During the spring of 1762 Charles Carter sent to the Society of Arts a 'taste' of his winter grape and white Lisbon grape wines, a keg of sturgeon, and a root of what was called in Virginia 'Turkey Rhubarb'. Moreover, he promised to send them the seeds of vetch and timothy grass.¹

* Reproduced from *The Virginia Magazine of History and Biography*, Vol. LXVII, No. 4 (1959), by kind permission of the Editor. Part (i) appeared in the November, 1960, issue of the *Journal*.

He desired that the 'Turkey Rhubarb' be examined to ascertain its medicinal qualities. Carter did not say so, but it would seem that Virginians called the plant by this name because of its resemblance to the original 'Turkey Rhubarb', the medicinal rhubarb from China, which in the fourteenth century had reached Europe through the ports of Aleppo and Smyrna. In Carter's day Russia had a monopoly of supplying it to the Western world. Among Virginians, rhubarb was a popular stomachic.

Wyche sent Carter in 1763 'a few seed of the very best Russia or Turkey Rhubarb that ever was sent to England'. A Mr. Baker (no doubt Henry Baker) had given them to Wyche for Carter, who was enjoined to grow good plants from them and save their seed, for Baker never expected to be able to get any more. Doubtless Russia was maintaining its monopoly by prohibiting the exportation of the seed. At the same time, Wyche urged the Virginians to raise more bees, for wax was in great demand in England.³

The vetch seed Carter promised to send to Wyche was also called 'Luping' seed. This plant was the same, according to Carter, as the vetch described in the writings of Dr. John Mitchell. Dr. Mitchell had collected and published much botanical data on Virginia between 1721 and 1746, and he continued his scientific publications after he went to England in 1746. He was still living at the time of the Carter-Wyche correspondence, for he did not die until 1768. It is thought by some authorities that he was a native of Virginia.³

The timothy grass of which Carter promised seed was, he declared, the grass named after its first cultivator. Undoubtedly this is a reference to Timothy Hanson, who is believed to have brought the seed of this grass from Europe to Maryland about 1720.⁴ Carter enthusiastically recommended it, for it vegetated in winter like wheat, afforded a rich hay in June, and was 'very agreeable to all sorts of Cattle'.

In the same letter⁵ Carter also informed the Society that he had received its shipment of olives and had divided them among the members of his committee with the request that each should try to raise olive trees. It seems that an experiment in the raising of olives was already in progress in Virginia, for during the next year Carter sent to the Society a sample from the colony which it pronounced to be 'much less than the Lucca olives' in quality.⁶

In response to a request of Wyche, Carter described more fully in 1762⁷ the white tar he had mentioned in an earlier letter to the Society. It was, he wrote, 'an accidental discovery'. He had decided to call it a white tar because there were already in the colony two darker kinds—common or black tar, made from scorched knots of pine, and green tar, made from trees barked at a proper season ten feet above the ground with a list of bark left on the north side. These trees were in a few months enriched with resinous matter, which was refined and was fairly satisfactory. The black tar, in contrast, was entirely useless in cordage because it was 'impregnated with fiery particles'.

The white tar was best for cordage. It was free from objectionable particles because it was made without bringing the tar into contact with the fuel. After a regular kiln had been built for the resinous material, a ditch two feet deep was made all around it, and an opening was left that connected the inside of the kiln with the ditch. Then brushwood was piled on the kiln and burned until its heat caused all the tar to run off. This was also the method used to extract the oil of cedar, and so the white tar might appropriately be called oil of pine, Carter declared. Besides its excellence in the making of cordage, it was, he claimed, 'an Admirable pectoral'.

Turning his attention to other medicinal plants he had not previously mentioned, Carter then wrote about the sweet gum, American-ipeac or Indian physic, 'Black ground Tree', and 'our Jallup'.

He thought that gum extracted from the sweet gum tree appeared to be the balsam of Tolu.⁸ Carter thus compared the extract of the sweet gum to a fragrant reddish-

brown semi-solid or solid balsam obtained from a South American tree. The South American variety is still used as a stomachic, a stimulating expectorant, an antiseptic and a flavouring for cough syrups. Carter wrote that the sweet gum balsam resembled the South American kind in being vastly beneficial in all catarrhs and fluxes. Sweet gum wood, he pointed out incidentally, was valuable for all 'inside work'—by which he presumably meant interior woodwork and furniture.

In regard to the American-ipecac, he wrote, 'We have also a species of the Ipecacuana growing wild in our woods which when cultivated were equally strong and Efficacious as that used in Britain.' Literally *ipecacuanha* means a small, roadside emetic plant. The variety Carter mentioned is evidently a herbaceous perennial that belongs to the native species of the rose family. It is still commonly known as American-ipecac or Indian physic.⁹

In describing the qualities of the 'Black gound Tree', Carter declared :

there is likewise in our Mountains Trees whose bark and leaves resemble much the Quinquina or Jesuits bark. It bears a Cone and was discovered by the Indians under the name of the Black gound [gowned] Tree by which I suppose they mean the Romish Missionaries and commonly take it for fevers and agues; and in obstinate Quarterns, when the Jesuits bark has failed, a cure has been performed by giving it in the same Manner. It grows among Rocks to the size of a Midling Man's Body by insinuating its Roots through the cliffs of the Rocks, its branches are horizontal diminishing towards the top so as to form a beautilous Connical head. The bark when gathered green smells extremely strong.

In Carter's description of the medicinal uses of this tree 'Quarterns' is evidently a reference to quartan malarial fever, in which the paroxysms occur approximately every seventy-two hours. It is not as virulent as the malign tertian fevers, which are sometimes called aestivo-autumnal (or black-water) fever.¹⁰ Carter's 'Black gound Tree' bears no resemblance to the marsh elder, which is often called in the United States the 'Jesuit Bark'.¹¹

Carter also mentioned a 'tree' that was 'called by the upper inhabitants allspice'. Presumably this was the wild allspice which grows in the woods of Virginia, though it is an aromatic shrub or bush rather than a tree. Carter claimed for it no commercial or medicinal value.

Carter's 'Jallup' was probably the root of pokeweed, for William Byrd II wrote in 1708, 'there is a Paper of a Root which I think very like Jalop, we call the plant here Poke'. After examining Byrd's sample, his correspondent, Sir Hans Sloane, had informed him they were not the same.¹² Originally the term 'jalup' was used solely to designate the purgative tuberous root of a Mexican plant or the powder made from it. Dr. Wyndham B. Blanton has found that jalup was a favourite medicine among eighteenth-century Virginians.¹³

Concerning 'Pot Ash', Carter wrote:

I must also add that the Refuse or Trash from our Tobacco Crops & the succers that grow after the Crop is housed, would properly managed, afford a considerable quantity of the best Pot Ash, of which I convinced Mr. Thomas Stevens some time ago, & on his application the sum of £100 was voted by the General Assembly to Erect a Furnace & process a quantity of Tobacco Ashes in order to his making a publick Experiment, which by some difference with the Ministry he was prevented [from] carrying on, & for which he by Letter made an Apology and last Summer came in Person to Excuse himself, and as he was under such difficulties & the great quantity of trash Tobacco saved, made use of before his Return for Manure, no steps are taken according to his Method; and we have at this time [c. 1760] only one Work for making Pearl Ashes that I know off: It gives me great concern that anything should happen to prevent so beneficial a Work; whether his imprudent Resentment may not exasperate

the Ministry so much against him as to lose this Advantage to Great Britain and this Colony, Time can only show.¹⁴

Carter's reference to Stevens' experience may be regarded as evidence of the strict, retarding control exercised by the home government over the development of manufacturing in Virginia.

In the quoted passage from Carter's letter, Carter wrote about 'Pot Ash' and 'Pearl Ashes'. Pearl ashes were refined from pot ash. Usually pearl ashes were made from wood ashes, except the ashes of pine or chestnut, by leaching the ashes and boiling the resulting lye into a brown salt, which was impure potassium carbonate or ordinary pot ash. The brown substance was then remelted and refined to make pearl ashes, a white substance. A cord of wood yielded from three to five pounds of pearl ashes.¹⁵

Seemingly, pearl ashes were produced for the export trade only in small quantities, despite the efforts of Carter. Only seven casks were exported from the upper District of James River between 25th October, 1765, and 25th October, 1766, while none had been shipped from that district in the two previous years.¹⁶

When the home government disallowed Virginia's Two Penny Act of 1758, Carter indignantly protested to the Society that the Act had been necessary.

We hope [he continued] as we shall use every Measure in our Power to promote Arts & Manufacturers in this Infant Colony, that we may rise in Reputation, and shortly convince your Board that we the least Deserve the Reflections cast on us by the Right Reverd. the Lord Bishop of London, and restore us to our Ancient Constitution; which at present we are deprived of by the most unjust Charges exhibited against us by the cruel Misrepresentation of some avaricious Clergymen who to Enrich themselves would have involved our Country in Ruin. I can with great Truth affirm, We stand in point of Loyalty in Rank with the most dutiful Subjects, and poor as we are, have exerted ourselves during the Course of this ruinous War [the French and Indian] beyond our Abilities, which we hope will soon be made appear by our Agent Edwd. Montague Esqr. I have sent Mr. Wyche two Pamphlets in answer to the Charge of the Clergy, & hope from a serious consideration of them, their false clamour will fall to the Ground.¹⁷

The two pamphlets Charles Carter sent probably were Landon Carter's *A Letter to the Right Reverend Father in God, the Lord Bishop of London* (1759) and Richard Bland's *A Letter to the Clergy of Virginia* . . . (1760). The Bishop of London was Thomas Sherlock. Having accepted the Reverend John Camm's statements on behalf of the Virginia clergy as to conditions in Virginia, Sherlock had charged the General Assembly of Virginia with virtual treason and intentional disloyalty to the King. As a result, Lieutenant-Governor Fauquier had been instructed by the home government not to consent to any Bill passed by the General Assembly that would expire in less than two years. By making laws of short duration the General Assembly had prevented them from being vetoed by the Privy Council.¹⁸

ROBERT LEROY HILLDRUP*

(To be concluded)

1. R.S.A. Guard Books (hereafter G.B.), Vol. II, No. 52. C. Carter, 28th May, 1762. This letter was received by the Society on 28th Sept., 1762.

2. University of Virginia Library, Sabine Hall Papers. Extract of a letter from Peter Wyche to Charles Carter, Aug., 1763.

3. Herbert Thatcher, 'Dr. Mitchell, M.D., F.R.S., of Virginia': *The Virginia Magazine of History and Biography*, Vol. XXXIX (1931), p. 129.

* The author is Professor of History at Mary Washington College, University of Virginia.

4. Charles K. Hallowell, 'Timothy Grass': *Collier's Encyclopedia* (New York, 1950-51), Vol. XVIII, p. 577.
5. G.B., loc. cit.
6. R.S.A., Minutes of the Committee of Colonies and Trade, 22nd Nov., 1763. Quoted Hudson & Luckhurst, p. 160.
7. G.B., Vol. II, No. 51, 10th April, 1762.
8. Carter's spelling is 'Tolor'.
9. O. E. Jennings and Audrey Avinoff, *Wild Flowers of Western Pennsylvania and the Upper Ohio Basin* (Pittsburgh, 1953), plate 81.
10. St. Julien Ravenel Childs, *Malaria and Colonization in the Carolina Low Country* (The John Hopkins Studies in Historical and Political Science, LVIII, Baltimore, 1940), pp. 12-15.
11. *Webster's New International Dictionary of the English Language*, 2nd ed. (Springfield, Mass., 1939), p. 1334.
12. William Byrd, 'Letters of William Byrd II, and Sir Hans Sloane Relative to Plants and Minerals of Virginia': *William and Mary Quarterly*, 2nd ser., Vol. I (1921), pp. 190, 192.
13. Wyndham B. Blanton, *Medicine in the Virginia in the Eighteenth Century* (Richmond, 1931), pp. 168, 197.
14. G.B., Vol. VI, No. 45. C. Carter, n.d.
15. 'Papers of Archibald Stuart': *William and Mary Quarterly*, 2nd ser., Vol. V (1925), pp. 291-2.
16. *The Virginia Gazette* (Purdie and Dixon), 12th Feb., 1767, pp. 2-3.
17. G.B., loc. cit.
18. See George MacLaren Brydon, *Virginia's Mother Church and the Political Conditions under which it Grew*, Vol. II (Philadelphia, 1952), pp. 288-320.

OBITUARY

We record with regret the death of the following two Fellows of the Society:

MR. HARRY FERGUSON

Mr. Harry George Ferguson, who built up a world-wide farm machinery business, died at Stow-on-the-Wold, Gloucestershire, on 25th October, aged 75. He devoted nearly his whole life to the furtherance of mechanization, and though his later years were overshadowed by his dispute with the Ford Motor Company, the vigour of his ideas remained undiminished. He had first begun seriously to implement them at the age of 16, when he started a small motor cycle and car servicing works in Belfast. Driving his own machines, he won several racing competitions. Before long, he also became interested in aeroplane development, and at the end of 1909 piloted the first heavier-than-air machine to be flown in Ireland, a monoplane which he himself had designed and built.

It was as a result of his war-time work for the Irish Department of Agriculture that Ferguson first began to concentrate on the production of implements for farming, an industry at this time still largely dependent on animal power. His first major achievement in this field was the design of a linkage for attaching a plough to a popular make of tractor. In 1922 he formed a company in Indiana, U.S.A., to build and market the Ferguson hand-lift plough. The 'Ferguson System'—a system of linkage and hydraulic control which could be used in connection with various types of agricultural implements—was devised in 1935, and in the following year appeared his famous light tractor. This machine was manufactured in this country until the advent of the Second World War. Ferguson then found it necessary to concentrate production in America, where he made with Henry Ford an agreement under which more than 300,000 tractors were eventually built and distributed.

After the war, when Ferguson had parted with Ford, he built his own large factory in Detroit. In 1952 the great lawsuit which he had brought against the Dearborn Rotor Corporation, an affiliate of Ford's, on the ground that they had infringed his tractor patents, was settled in Ferguson's favour, and thereafter his preoccupation with the agricultural sphere lessened. In 1953 he merged his company with the Massey-Harris Company of Toronto, and became Chairman and principal shareholder of this new organization, but only a year later he sold out all his shares and resigned from the board, in order to devote himself to a campaign for price reduction. Latterly he had also been much occupied with plans for a new Ferguson motor car, which has not yet been publicly demonstrated.

Ferguson was elected a Fellow of the Society in 1949.

THE EARL OF VERULAM

The Earl of Verulam, who died on 13th October, aged 50, had a distinguished career in industry, and gave notable service to a variety of public causes. As Viscount Grimston, he made his mark both at Eton and Oxford (where he read zoology), and on leaving the university decided to enter the field of metals and metallurgy. His progress was striking. He became Managing Director of Enfield Zinc Products Ltd., at the age of 23, and three years later, in 1936, a Director (he was subsequently Managing Director) of Enfield Cable Ltd. Since 1949 he had been Chairman of the Enfield Rolling Mills (Aluminium) Ltd. He had also for some years been Chairman of the British Institute of Management and of the Institute of Industrial Administration.

Verulam's work for industrial development, however, was characterized not only by a great capacity for business. He devoted much time and thought to the deeper questions of human well-being. In industry, this sense of responsibility found expression in his support of the Industrial Co-Partnership Association, and in his work, during the 1930s, for the Subsistence Production Society of the Eastern Valleys of Monmouthshire, which sought to alleviate the effects of the Depression in that area. In other spheres he will be remembered for his service to the Church, and as Chairman of the St. Mary's Hospital Medical Board and of the National Baby Welfare Council.

Verulam was the fifth holder of the Earldom, having succeeded his father in 1949. He was elected a Fellow of the Society in 1938. In May of last year he contributed a paper to its proceedings entitled 'Trade and the Bamboo Curtain', for which he was awarded a silver medal.

NOTES ON BOOKS

MODERN AUSTRALIAN PAINTING AND SCULPTURE. *A Survey of Australian Art from 1950 to 1960. Produced by Kim Bonython. With a Foreword by Professor Joseph Burke, and an Introduction by Laurie Thomas. Adelaide, The Griffin Press, 1960. £5 5s net*

Mr. Kym Bonython, who is a collector and connoisseur as well as being professionally interested in publishing, has produced an impressive piece of printing, binding and blockmaking, which indicates a high standard of book production in Australia. For those who think only of Sydney or Melbourne in this connection it is a reminder that Australia has a tradition of printing as long as its tradition of art, a reminder also that other capital cities can claim distinction in the several arts.

Mr. Laurie Thomas, in his introduction, writes with knowledge and enthusiasm about Australian art, which he says 'is at floodtide'. These are brave words. Are we to assume then that the ten years covered by this survey represent the crest of the wave? Will 1961 already see this collection dated and as out of fashion as say, the popular paintings of Sir Hans Heysen, Sir Arthur Streeton and other giants of the

half century? Therein lies the danger of the arbitrariness of such a time limit, but we must not let it spoil our enjoyment of the moment.

The variety and breadth of vision shown in this collection of Australian art is quite remarkable. Sixty artists have been chosen to represent the decade, and they also represent fairly, I think, what the art critics and art galleries consider the elect of the present-day painting groups. These groups form and reform from decade to decade, and there are many of them in Australia. Melbourne has its Contemporary Art Society and Sydney its similar group. Each of the six States is fiercely partisan for its own favoured few. The standards reached by these artists are reflected and can be studied in this book. On analysis it will be seen that the painters and sculptors represented cover a period well exceeded by the ten-year limit. The eldest of them is 70 and the youngest 29. Of the sixty presented, fourteen were not born in Australia, but arrived at an early age or recently as 'New Australians'. Twenty of them are 50 or over, forty are 40 or over, and three only are women. A manly art indeed! For what they are worth, these are vital statistics.

The great size of this island continent and the comparative smallness of its population should be kept in mind when trying to assess the value and tendencies of Australian art. Its white population is principally Anglo-Celt and, with the influx of *Northern and Central European and near-Eastern immigrants*, there is only recently the beginning of a subtle change in national characteristics, which is reflected in the newer works of art. The tough, truly Australian strain, carried over from pioneering ancestors, will continue to be a dominating influence whenever the artist's imagination is allowed to escape from the limitation of the large cities' boundaries (where over 75 per cent of the population lives) or into the past. It is then we get the 'Ned Kelly' and 'half-caste Bride' nexus which haunts some of the canvasses of the Nolan-Boyd school, to which recent exhibitions in London have drawn attention.

It would be a pity to conclude, however, that because of his popularity in England, Nolan was the only 'great' Australian painter. Russell Drysdale and William Dobell should at least be ranked beside him for that honour and, as for such figures as Heysen, Dargie, Lindsay, Missingham and other academic painters, they do not belong to the group and are not represented here.

It is to be hoped that the insidious influence of the art dealer, critic and snob cartel does not hold out its arms too invitingly to Australia, where its embrace could so easily end in a kiss of death. Are we blowing up a bubble which might be pricked by a generation not yet born? Shades of Leighton and Alma Tadema!

Sculpture does not occupy so much space in the book as painting, but it is impressive. As Mr. Thomas points out, sculpture does not move about from State to State as easily as painting, and so one might assume that each State is developing along its own lines, with a strong European influence at work, and showing not much impact from the native Australian aborigine artifacts or the more colourful Pacific island carving which lies near to hand.

It is heartening, however, to note that architecture is patronizing the sculptor to an increasing extent, and some notable examples are to be found in recent public buildings and universities.

D. J. FINLEY

MASTERPIECES OF DALA PEASANT PAINTING. By Svante Svärdröm. Translated by G. A. Urquhart. Stockholm, Albert Bonniersforlag, 1960. (London, Mark Paterson & Co. Ltd., 34 Beech St., E.C.4. 25s net)

With nearly fifty illustrations, many in colour, and English text, this book serves as an admirable introduction to a subject surprisingly little known in this country—the Swedish peasant paintings made originally to decorate the walls of the wealthier farmhouses and taking their name from the Dalarna province, although they flourished in North Eastern and Southern Sweden also. Within so small a compass

the author has nevertheless managed, by skilful selection, to convey some idea of the richness and variety of these paintings.

I have just returned from visiting an exhibition of over 200 of Dalmalare paintings in the Liljevalchs Konsthall in Stockholm; this was only one of several collections of these paintings, on view in Stockholm at the time. I also saw another exhibition, in the Skansen Museum, where the paintings were shown in the houses for which they were painted. It is not the quantity alone which is so surprising, but the variety. Admittedly, they are painted within a certain convention; they are all two-dimensional, and have in common the fact that they are all on religious themes, although often one has to read a caption to recognize this, since all the figures are in contemporary costume (of the period of the painting) and the scene is frequently the village street. The technique also is traditional; it is a kind of egg tempera, painted sometimes on canvas and sometimes on paper. But within these conventions, the variety of different styles of the various painters is what is most striking, and their very personal vision and colour sense is quite bewitching.

The paintings were done in the period between the mid-eighteenth and mid-nineteenth centuries, covering in all about one hundred years. They were painted at the request of farmers and used for the decoration of the walls of their wooden houses on feast days and Holy Days; such houses as they were painted for often had one large room set aside for special occasions. Failing such a room, they were displayed for the Feast Day and afterwards rolled up and put away.

Red is popular in some of the districts in which the paintings are done. Cochineal is sometimes used for the reds, although it is said that in the south of Sweden bricks were ground up to provide the reds. The painters were not always peasants. They might well be schoolmasters or old soldiers who had travelled in foreign lands.

Scholars have shown that the original themes were taken from prints, frequently from German Bibles of the sixteenth century with their wood-cut illustrations, which the painters supposedly saw in their local church. In comparing the prints and paintings side by side, as they were displayed in some instances at the exhibition, it is amazing to see how different are the two conceptions, the less sophisticated peasant paintings often being far more imaginative than their more highly skilled masters. Although there is a certain naïveté of execution, it is always more than compensated for by an unerring decorative sense.

The gourd, which occurs again and again, composed of bosky foliage and stylized flowers which often dwarf the figures, is said to have originated from the Book of Jonah, Chapter IV. Here it is sometimes used to depict seething vitality and sometimes as a symbol of languishing death: as such, it was employed by God as an illustration to Jonah to make him understand his task. The Swedish peasant painter uses the gourd to express every mood and fill any empty space.

After seeing a large number of these paintings one comes away with the feeling of having visited a very real but fairytale land populated by figures from a ballet—at times one can almost hear the music.

Although peasant decorations of houses are found in many other countries too—for instance Bavaria, Austria, Hungary—the Swedish Dala paintings are distinct in character and are unique in forming such a flourishing school of painters working within a formula, yet with so much individuality.

ENID MARX

CYPRUS THEN AND NOW. *By Gordon Home. With a Preface by Field-Marshal Lord Harding. London, Dent, 1960. 21s*

This is a potted history and a sort of superior guide-book admirably illustrated by the author's own drawings. Here, convincingly shown in black and white, is the scenery and architecture of Cyprus; here are Neolithic and Bronze Age ceramics, remnants of ancient palaces, relics of Rome and Byzantium, Lusignan castles and cathedrals, Venetian monuments and Ottoman minarets. Here, too, is the end

product of this cavalcade of history, unchanging and enduring against all hardship and circumstance, the Cypriot shepherd and husbandman.

We, the masters of the island for a mere eighty years, were accused of Genocide—of attempting to destroy the soul of the people by robbing them of their Greek heritage. It is inconceivable that any such intention was ever consciously formulated: our political reputation in Cyprus, as elsewhere, is perhaps more distinguished for well-intentioned ineptitude than Machiavellian subtlety: but the belief was there. This belief may have derived from our simple and unquestioning concept of the superiority of British institutions, a concept implicit in Major Home's book which gains colour by contrast with the three sad centuries of Turkish rule. There is also a background picture of a simple-minded and bewildered peasantry nose-led by a scheming and ambitious Ethnarchy, to which Viola Bailey, who contributes the chapter on Cyprus during the troubled years, adds a flock of educated Greek Cypriots and businessmen hustled unwillingly on to the *Enosis* band wagon. Both writers tend to underrate the fervent Hellenism that inflamed peasant and pedant, artisan and Archimandrite. It was a Nicosia businessman who, in the early days of the troubles, drove me to Famagusta to fetch my car, a typical act of kindness and welcome to the unwanted stranger. 'I was a poor boy', he said; 'I came from a village. Thirty years I have been building up my business. It is a good business. It was for my sons. They have been educated in England. My trade depends on England. If *Enosis* comes I am ruined—and I want *Enosis*!' Throughout the four bitter years his view did not change, nor did his friendships. He was typical of many.

How was it that this passionate Hellenism survived millennia of changing domination by almost every power that commanded the sea-roads of the eastern Mediterranean? The author does not attempt to analyse or explain. The first half of his book is a brief factual history of six thousand years, from the earliest Neolithic settlements of which there is evidence until the island became a British Crown Colony as recently as 1925; and two later chapters, including Mrs. Bailey's account of the years of endurance, carry the story forward to the end of terrorism and the acceptance of a republican constitution.

The author himself saw nothing of the island during the years of disruption, and his lack of recent contact is revealed by the occasional anachronism. The 'lakes' west of Famagusta have long since ceased to hold water behind the broken dam walls. Expansion of water supplies and irrigation, a British achievement to which he gives well-merited praise, was based on bore-holes rather than surface dams, for which there are few suitable sites. The material achievements of British rule, and the despairingly difficult economic problems inherited by this tiny and puling nation born so abruptly into a world of nations, are touched upon only lightly. Such matters do not seem to fall altogether within the author's field of expertise. Members of the Grain Commission will be greatly surprised to learn that record crops of wheat and barley 'are disposed of with the greatest facility'.

Shakespeareans may be equally surprised by the categorical statement, unfortunately relegated to a footnote, that William was an 'illiterate actor employed by Bacon as a dummy'.

As a concise and lucid introduction to the history and antiquities of Cyprus, the book and its illustrations will appeal to all who know and love the island. It is also excellent fare for the arm-chair traveller.

WILLIAM ALLAN

WALL STREET: THE INSIDE STORY OF AMERICAN FINANCE. By Martin Mayer. London, The Bodley Head, 1959. 21s net

This is a reporter's book, written in a dramatizing, hectic style and making the most of local colour. At the same time it conveys a great deal of reliable information that cannot be found in any textbook, and it repays reading. No one who has any curiosity about the way Americans run their financial system should be put off by the

difficulties of language, which may be illustrated simply by quoting from the first sentence of chapter one: 'A bunch of the boys were whooping it up in the back room of the American Stock Exchange, which happens to be a public restaurant . . .'. The book is full of careful accounts of stock market technique, banking practice and the ways of the capital market; some of the people who have dominated the Wall Street scene in the past thirty years are well described in brief thumbnail sketches. The whole is much better than some of the parts.

There is an excellent pen picture, for example, of the man who succeeded in persuading millions of ordinary American men and women to put their savings into shares: the late Mr. Charles Merrill. The origin of his success was a bad speculation on self-service chain stores, which were then before their time; Charles Merrill was left with a huge parcel of unsold shares and, instead of going bankrupt, he took on the running of the store business and quickly made it profitable, so that he could sell out for a fortune. Then he went into stockbroking and applied to it the chain-store technique. Having formed a group of brokers he started a nation-wide advertising campaign based on truthful information, and his firm came to have over a hundred branches and to do over 10 per cent of all the dealings in Wall Street. This business is so highly organized and instrumented that a customer in, say, Los Angeles placing an order to buy or sell a share on the New York market is expected to have his printed confirmation that the deal has been executed within three minutes. Although stock-brokers are of all sizes down to 'a man and a girl', this is obviously a large, highly developed industry which is well worth studying, and Mr. Mayer does supply a mass of precise information in between the touches of colour.

He does not, on the whole, approve of Wall Street. He believes the financial community exacts excessive fees for the services it undoubtedly renders to the nation. But he also gives a fair description of the strict laws against the deception of the public which were passed after the collapse of 1929, and of the rigid supervision of the market now exercised by the control authorities. 'These controls are much stricter than anything known in this country, and British investors might well be better off if they had at least some of the protective devices that exist in the United States. No doubt the American control is more severe than would be justified in London, and it has bureaucratic aspects that would be unwelcome over here; but there is much to be learned from American experience. Mr. Mayer's book is not only a successful dramatization that makes interesting reading, but it is in many ways relevant to our own current problems.

RICHARD FRY

CONTROLS FOR OUTER SPACE. By Philip C. Jessup and Howard J. Taubenfeld. *New York, Columbia University Press, 1959. (London, O.U.P., 35s net)*

This volume, produced by the University of Columbia as the first of a new series on International Organization, comes at an opportune moment. The many problems which it raises cannot be quickly solved, but may at least be set down in comprehensive and logical form. In this task the authors have been most successful; the text is lucid and informative, while the extensive references will be of great value for future studies.

The earth satellites and lunar probes have led to arguments in the political as well as the scientific field. The concept of 'space law' is new, but is rapidly becoming of the utmost importance. It is not, of course, a question of who owns the Moon, or how we will deal with the Martians when actual space-flight becomes possible; even a lunar voyage still lies some way in the future, and the chances of our finding intelligent life on Mars or any other of the planets in the Solar System are slight enough to be neglected entirely. But controls are already needed, and, as the authors show, one example of this is given by radio communication. Various satellite transmissions have interfered with aircraft navigation aids, and even with each other.

Unless international agreement can be reached, this sort of trouble will increase rapidly. More serious is the question of 'airspace'; to what altitude do national boundaries remain valid? We can picture a situation in which an orbiting satellite launched by one nation is shot down by another. This has happened often enough in the case of aircraft; but if a satellite were involved, the resulting political crisis might well be of the most serious nature.

As the authors realize, the root of the problem goes back many years, and the book begins with a long section entitled 'International Controls in Retrospect', dealing with the various methods used for small islands such as Canton and Enderby; free cities such as Danzig; larger areas such as Tangier, and so on. One is forced to realize that few of the past experiments in shared control have been even moderately satisfactory.

To-day, the only really large area of land surface still in dispute is Antarctica, and discussion of Antarctic control is the theme of the second section of the book. As is pointed out, an encouraging note was struck during the International Geophysical Year, when scientists from many countries took part in a general research problem in the far south; but even here the agreement was far from complete. Communist China, for instance, refused to take any official part in the I.G.Y., owing to the acceptance of Chinese Nationalist participation.

Having linked Antarctica with future problems, the authors turn to the consideration of what may be termed 'outer space'. This section occupies 100 pages, and the last part is aptly headed: 'Chaos or Control?'

Of course, the main cause of the present unsatisfactory state of affairs is the lack of sympathy between the United States and the U.S.S.R. So far, no other nation is in a position to launch satellites, and violations of airspace—whatever limiting altitude may be considered—are relatively few. But within the next few decades many other nations will be concerned, and chaos will indeed result unless agreement can be reached fairly soon.

This book shows the crux of the whole matter. The problems are new, and must be tackled by new methods. Comparisons with Tangier, Danzig and Antarctica must not be carried too far, and the immediate need is to formulate a definite policy to which all nations will adhere. It is also worth remembering that a multiplicity of committees is no substitute for plain commonsense.

PATRICK MOORE

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FROM THE JOURNAL OF 1860

VOLUME VIII. 21st December

OIL WELLS

A new article of commerce from America seems likely soon to attract much attention. On the western border of New York State, at a place called Union Mills, some working men a year or two back observed a quantity of dark oily matter floating on pools abounding in that district. Subsequent experiments led to the discovery that the oil is highly adaptable for illuminating purposes, and that by sinking wells to the depth of from 70 to 500 feet it can readily be obtained throughout a very extensive area. Indeed, it is said already to have been ascertained to be dispersed over 100 square miles. The proportion of oil in the liquid pumped up is about one-third, and the process of separation is very simple. Land in the locality has become exceedingly valuable, and the business is rapidly increasing. About 1,200 to 1,500 barrels, containing 40 gallons each, are now, it is said, being raised daily and sent to New York, where, when rectified, it sells in any quantity at a price equal to 3s. sterling per gallon. There is a residuum, also, which is described as being used for the manufacture of superior candles. Many shipments of the oil have been made to Australia. In addition to its illuminating capacity it is alleged likewise to be suitable, when mixed with fish oil, for the process of lubrication.

AUSTRALIA

The *Times* of the 18th instant [December] states, that the news by the present steamer from Australia is in one respect the most important ever received. The problem as to the possibility of crossing the continent from South to North has been virtually solved, and no question now remains that a land transit may be opened up, available not only for the general purposes of commerce, but also for telegraphic communication. Mr. Stuart, who started from Adelaide about last March on an exploring expedition, with two companies and a number of horses, has returned, after having crossed the country to a distance of about 1,600 miles from Adelaide and to within 300 miles of the Victoria river. Here he was turned back by a body of hostile natives; but, as he had already reached 100 miles further north than the point to which Gregory's expedition in 1856 descended from the Victoria, the continent may be considered, by the joint results of these surveys, to have been fairly opened up from one end to the other. Instead of an arid desert, it is described to be a practicable country throughout. The full details of the observations made were for the present, however, kept secret, the Parliament of South Australia having voted £2,500 to enable Mr. Stuart to start again with a larger and more strongly organised party, and a desire being entertained to prevent the triumph of final success being snatched from him by rival explorers in the other colonies, who might hastily avail themselves of all his information. Still, enough had been allowed to transpire to give a general idea of the route traversed. Mr. Stuart and his companions suffered terribly from want, not only of water, but of food, and also from an attack of scurvy. The part of the route in which water was totally absent, however, was only 60 miles. In many parts there was fine grass, besides splendid gum and other trees, including at least four kinds of palm. A very large salt lake was also discovered in the interior, supposed, from the blueness of its water, to be of great depth. The event had created great excitement and rejoicing at Adelaide, and the general impression was that a number of new provinces would ultimately be formed in the territory thus explored, and that meanwhile the tract might be made available almost immediately to facilitate communication with India, and especially the export trade in horses. The new expedition, which was to start immediately, would consist of Mr. Stuart and one of his former companions, ten other well-armed men, and a suitable number of horses.

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*The following are the present representatives of the Society upon
 the Governing Bodies and Committees of other organizations:*

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- Building Orders Preservation Committee: Oswald P. Milne
- National Advisory Council on Art Education: A. B. Read, R.D.I.
- East Ham Technical College (Board of Governors): R. R. Coomber

Some Activities of Other Societies and Organizations

MEETINGS

THURS. 1 DEC. British Foundrymen, Institute of, at 17 Belgrave Square, S.W.1. 6.30 p.m. Dr. D. V. Atterton: *Origin, detection and elimination of gases in cast metals.*

Electrical Engineers, Institution of, Savoy Place, W.C.2. 5.30 p.m. W. R. Stevens and H. M. Ferguson: *Our civic lighting: gloom or gaiety?*

Naval Architects, The Royal Institution of, 10 Upper Belgrave Street, S.W.1. 4.45 p.m. J. E. Conolly: *Strength of propellers.*

Royal Commonwealth Society, Northumberland Avenue, W.C.2. 1.15 p.m. Sir Douglas Hall: *Somaliland's last year as a protectorate.*

FRI. 2 DEC. Analytical Chemistry, Society for (Scottish section), at Royal College of Science and Technology, George Street, Glasgow, C.1. 7.15 p.m. R. C. Chirnside: *Ramsay chemistry and the electrical industry.*

Radio Engineers, British Institution of, at London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1. 6.30 p.m. D. Roberts: D. S. Campbell and P. M. Thompson: *Progress in microminiature circuit techniques for digital computers.*

Royal Institution, 21 Albemarle Street, W.1. 9 p.m. J. Z. Young: *Control, constancy and change in animal life.*

MON. 5 DEC. Commonwealth Institute, S. Kensington, S.W.7. 5.45 p.m. Miss E. Solomons: *Present day Ceylon.*

TUES. 6 DEC. Civil Engineers, Institution of, Great George Street, S.W.1. 5.30 p.m. J. E. Nash: *A unit hydrograph study with special reference to British catchments.*

Locomotive Engineers, Institution of, at 1 Birdcage Walk, S.W.1. 5.30 p.m. J. H. Cansdale: *Rheostatic braking applied to multiple-unit trains.*

WED. 7 DEC. Newcomen Society, at Science Museum, S.W.7. 5.30 p.m. Frank Atkinson: *The horse as a source of rotary power.*

Radio Engineers, British Institution of, at London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1. 6.30 p.m. H. G. Hinckley: *Flight evaluation of airborne electronic equipment.*

Victoria & Albert Museum, South Kensington, S.W.7. 6.15 p.m. Ralph Edwards: *Restoration taste in the decorative arts.*

THURS. 8 DEC. Royal Commonwealth Society, Northumberland Avenue, W.C.2. 1.15 p.m. Sir Robert Scott: *South-east Asia.*

University College, Gower Street, W.C.1. 5.30 p.m. Sir Solly Zuckerman: *The social function of science—1960.*

FRI. 9 DEC. Engineers, Junior Institution of, at Pepys House, 14 Rochester Row, S.W.1. 7 p.m. F. M. Panzetta: *A short history of the rubber industry.*

Royal Institution, 21 Albemarle Street, W.1. 9 p.m. Dr. R. L. F. Boyd: *Rocket astronomy.*

MON. 12 DEC. Commonwealth Institute, South Kensington, S.W.7. 5.45 p.m. Miss C. Carrill: *Visit to Singapore.*

Royal Geographical Society, 1 Kensington Gore, S.W.7. 8.30 p.m. Brigadier Bernard Ferguson: *A return to upper Burma.*

Transport, Institute of, at 66 Portland Place, W.1. 5.45 p.m. J. M. A. Smith: *The impact of the motor car on public transport.*

TUES. 13 DEC. Analytical Chemistry, Society for (Midlands section), at Regent House, St. Philip's Place, Birmingham 3. 6.30 p.m. K. B. Coates: *The analysis of waters used in industry.*

Architects, Royal Institute of British, 66 Portland Place, W.1. 6 p.m. A. J. Harris: *Architectural misconceptions of engineering.* Eric Lyons: *Neighbourly houses.*

Radio Engineers, British Institution of, at London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1. 6.30 p.m. G. D. Browne: *A pulse multiplex stereophonic broadcasting system.*

WED. 14 DEC. Mechanical Engineers, Institution of 1 Birdcage Walk, S.W.1. 6 p.m. Dr. D. F. Galloway: *Machine tool research, design and utilization.*

Victoria & Albert Museum, South Kensington, S.W.7. 6.15 p.m. Graham Reynolds: *Samuel Cooper.*

THURS. 15 DEC. Mechanical Engineers, Institution of, 1 Birdcage Walk, S.W.1. 6 p.m. Nuclear Energy Group Discussion: *The impact of a three-fuel economy.*

FRI. 16 DEC. Sound Recording Association, British, at Royal Society of Arts. 7.15 p.m. D. O'C. Roe: *Magnetic recording in the home cinema.*

MON. 19 DEC. Mechanical Engineers, Institution of, 1 Birdcage Walk, S.W.1. 6 p.m. Steam Group Discussion: *Safety on construction sites.*

OTHER ACTIVITIES

MON. 28 NOV-SAT. 31 DEC. Council of Industrial Design, Design Centre, 28 Haymarket, S.W.1. Display: *All set for Christmas.*

FRI. 2 DEC. Engineers, Junior Institution of, at Pepys House, 14 Rochester Row, S.W.1. 7 p.m. Films: *Downray fast reactor. More for your money and Isotopes in industry.*

MON. 5 DEC-SAT. 31 DEC. Council of Industrial Design, Design Centre, 28 Haymarket, S.W.1. Display: *Dining-room setting.*

MON. 5 DEC. Royal Geographical Society, 1 Kensington Gore, S.W.7. 6 p.m. Film: *Land of the long day.*

WED. 7 DEC. Building Centre, Store Street, W.C.1. Redland Tiles Ltd. Film: *Right at the top.* Engineers, Junior Institution of, at James Watt Memorial Institute, Gt. Charles Street, Birmingham. 7 p.m. Film: *Wilkins & Mitchell.*

TUES. 13 DEC. Royal Commonwealth Society, Northumberland Avenue, W.C.2. 7.30 p.m. Film (made and introduced by Prince Peter of Greece and Denmark): *Asian allies.*

WED. 14 DEC. Building Centre, Store Street, W.C.1. Hadfields (Merton) Ltd. Film: *The 'Saf' story.*

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